A MONOGRAPH OF THE PHEASANTS

BY

WILLIAM BEEBE

VOLUME III.

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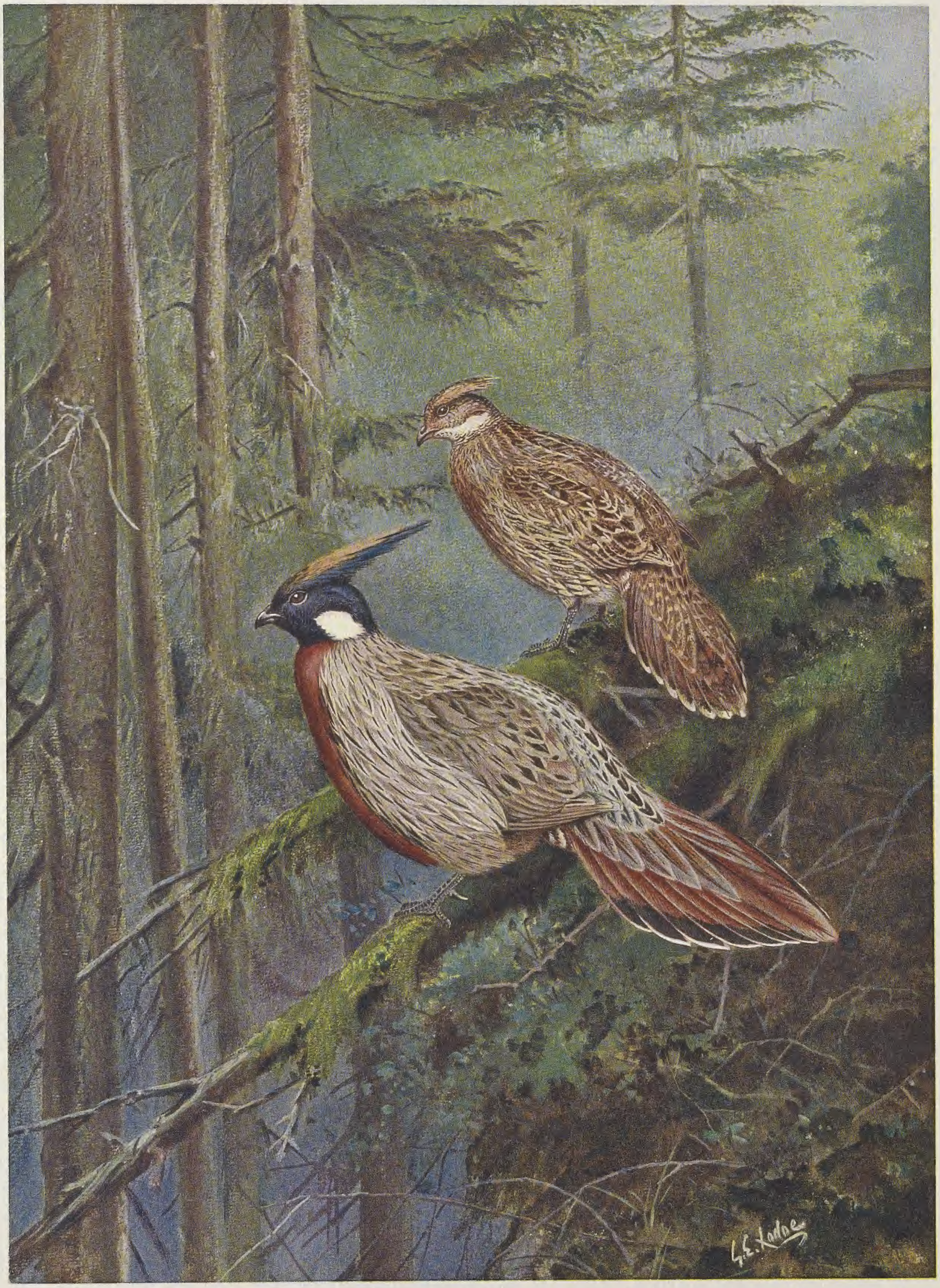
A MONOGRAPH OF THE PHEASANTS

FRONTISPIECE. PLATE XLV.



THE COMMON KOKLASS PHEASANT.

A MONOGRAPH OF THE PHEASANTS

WILLIAM BEEBE

THE COMMON KOKLASS PHEASANT

Pucrasia macrolopha macrolopha (Lesson)

This Koklass is shy and rather solitary, adverse to gathering in large flocks even to feed. It is pre-eminently monogamous, and the pairs remain together throughout the year.

It invariably roosts in trees. I have found them well up in deep conifers, and they return night after night to their favourite perch. In spring, at least, they roost in pairs, or the male alone when the female has begun to sit.

A MONOGRAPH OF THE PHEASANTS

BY

WILLIAM BEEBE

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COLOURED PLATES

PLATE XLV. THE COMMON KOKLASS PHEASANT *Pucrasia macrolopha macrolopha* (Lesson) *Frontispiece*

Painted by G. E. Lodge.

This Koklass is shy and rather solitary, adverse to gathering in large flocks even to feed. It is pre-eminently monogamous, and the pairs remain together throughout the year.

It invariably roosts in trees. I have found them well up in deep conifers, and they return night after night to their favourite perch. In spring, at least, they roost in pairs, or the male alone when the female has begun to sit.

PLATE XLVI. KASHMIR KOKLASS PHEASANT *Pucrasia macrolopha biddulphi* Marshall . . . . *Facing page* 24

(Upper left-hand figure)

WESTERN KOKLASS PHEASANT *Pucrasia macrolopha castanea* Gould

(Lower figure)

NEPAL KOKLASS PHEASANT *Pucrasia macrolopha nipalensis* Gould

(Right-hand figure)

Painted by G. E. Lodge.

The sides and flanks are grey in the Kashmir bird, chestnut in the Western Koklass, and nearly black in the Nepal form.

Their habits are similar, and in all parts of their mountainous range we find conifers overhead, and, as in the painting, beds of tall saxifrage pushing up through the fallen needles and cones, their filmy heads nodding in the dim forest light.

PLATE XLVII. YELLOW-NECKED KOKLASS PHEASANT *Pucrasia xanthospila xanthospila* Gray . . . . *Facing page* 32

Painted by G. E. Lodge.

On a bitterly cold, rainy day, near the Great Wall of China I heard the crow of one of these pheasants, and although I had no dog I stalked the bird. Through the mist the stunted vegetation showed dull brownish, dripping, saturated, while the rocks had no healthy covering of moss and lichens, but a dark, shining slime which made walking very difficult. Across a small open space I saw the Koklass run swiftly, the white neck patch and tail-tips flashing conspicuously as it went.

PLATE XLVIII. DARWIN'S KOKLASS PHEASANT *Pucrasia darwini darwini* Swinhoe . . . . *Facing page* 42

(Lower left-hand figure)

STYAN'S KOKLASS PHEASANT *Pucrasia darwini styani* Grant

(Upper right-hand figure)

Painted by G. E. Lodge.

The lower plumage is a warm chestnut in Darwin's Koklass, but clear black and grey in Styan's Pheasant.

These birds live in the uplands of the coastal provinces of east-central China, where they range through the bamboo groves on the open hillsides. They are everywhere rare and seldom seen or shot.

PLATE XLIX. CHEER PHEASANT *Catreus wallichii* (Hardwicke) . . *Facing page* 50

Painted by L. A. Fuertes.

Leaving my camp in a deep Garhwal valley, and working up through the soft-needled forest of deodars and spruces, I came suddenly, without warning, upon bare open ground. I pass over a low ridge, and instead of the shaded, densely-wooded slopes, I find rocky, grass-covered ledges dropping down in jagged terraces, and, on the other hand, rising steeply to where the stern profile of the summit is silhouetted against the fleecy clouds.

This is the home of the Cheer. Although protectively coloured when crouched in the half-dead grass, they are conspicuous when in full flight. The golden and green sheen of the back and rump at the time of their headlong rush sometimes catches the glint of the sun, and in sudden turns the tail flares out into a streaming cross-barred train, forming a marvellous spot of pattern and colour.

PLATE L. RION CAUCASIAN PHEASANT *Phasianus colchicus* Linné *Facing page* 80

Painted by H. Jones.

This pheasant, living between the Black and the Caspian Seas, is the type of its entire group, and probably the same bird which was brought by the Romans to England, known commonly as the English or Black-necked Pheasant. It has since been introduced into many parts of Europe, Asia and America, and thrives in almost any temperate climate. In many places it has satisfactorily replaced the indigenous game-birds, which have been driven out by advancing civilization.

PLATE LI. PRINCE OF WALES'S PHEASANT *Phasianus colchicus principalis* Sclater . . . . *Facing page* 88

Painted by H. Jones.

This splendid bird lives in southern Turkestan in the great Mero Oasis. In north-western Afghanistan it has been found in tamarisk and grass jungle growing in the bed of the river. It wades and even swims in the water of these marshes, but feeds in the more open, dry country.

This form has been successfully introduced into England and elsewhere.

PLATE LII. KIRGHIZ MONGOLIAN PHEASANT *Phasianus colchicus mongolicus* Brandt . . . . *Facing page* 96

Painted by H. Jones.

This splendid northern Ring-neck ranges over an amazing diversity of country in the heart of Asia. They are fast runners and high-flyers and afford magnificent sport on the steppes and sand dunes where they make their home. In the winter the Kirghiz practice falconry with enthusiasm, and their favourite sport is flying goshawks at pheasants.

PLATE LIII. TARIM PHEASANT *Phasianus colchicus tarimensis* Pleske . *Facing page* 102

Painted by H. Jones.

In the poplar forests along the Tarim River these birds live in covies, depending on berries for food during the hard winters and often compelled to roost on the slight branches of the poplars to avoid their enemies on the ground. Besides the foxes and smaller vermin, they look down from their perch upon troops of wild pig and wild camels, which pad softly over the sand, while overhead flocks of wild geese drive northward almost before the ice breaks from the river and pools.

PLATE LIV. STRAUCH'S PHEASANT *Phasianus colchicus strauchi* Prjewalski

Painted by H. Jones. *Facing page* 106

On the wooded slopes of the Kansu Mountains, up to the height of a mile and a half above the sea, Strauch's Pheasant makes its home. It varies widely in character of plumage and on the limits of its range approaches the neighbouring forms. From six to twelve eggs are laid, and in these tumbled mountains the pheasants seem to be more strictly monogamous, the cock aiding in the care of the young, than in the great flat plains to the east, where food is more abundant and the birds are so much more numerous.

Plate LV. KWEICHOW PHEASANT *Phasianus colchicus decollatus* Swinhoe

Painted by H. Jones. *Facing page* 110

Occurring as far south as Tongking, this pheasant ranges higher than the more northern forms, and has been observed at an elevation of nine thousand feet. It seems to prefer bushy slopes to the dense forest. It differs from the pheasants to the east and north chiefly by the lack of a white collar, although traces of this are sometimes present.

Plate LVI. FORMOSAN RING-NECKED PHEASANT *Phasianus colchicus formosanus* Elliot . . . . *Facing page* 112

Painted by H. Jones.

As the island of Formosa is over one hundred miles from shore, and as this pheasant differs from those on the neighbouring mainland only by the usually paler plumage, it is probable that it is more or less of a recent introduction. The cocks show considerable variation among themselves and the females are quite indistinguishable from the birds of the eastern Chinese Provinces.

Plate LVII. MANCHURIAN RING-NECKED PHEASANT *Phasianus colchicus pallasi* Rothschild . . . . *Facing page* 114

Painted by H. Jones.

This pheasant, from the far north-east of China, possesses the widest and most complete white collar. It is never found high up on the mountains, but usually on the more sheltered lower slopes or on the flat bushy plains.

Plate LVIII. KOBDO PHEASANT *Phasianus colchicus hagenbecki* Rothschild

Painted by H. Jones. *Facing page* 116

Little is known of this form from the Kobdo valley. It very closely resembles *pallasi*, fifteen hundred miles to the east, while to the west it is separated from *mongolicus* by only a single range of mountains, yet it differs radically in colour from that form.

Plate LIX. EASTERN CHINESE RING-NECKED PHEASANT *Phasianus colchicus torquatus* Gmelin . . . . . . *Facing page* 120

Painted by H. Jones.

This is the Ring-necked Pheasant which has been introduced so widely into America and, especially in the west, has increased so that it has to be kept down to prevent damage to crops.

Its habits in general throughout the east of China, from Pekin to Canton, differ not at all from those of the birds in our own country. They feed morning and evening, rest during the middle of the day, roost on the ground, lay six to twelve eggs on débris in grassy or shrubby places. The young birds acquire the adult plumage the first autumn. As many as eighteen hundred and one have been shot in twenty-three days on the Yangtse.

Plate LX. GREEN JAPANESE PHEASANT *Phasianus versicolor* Vieillot

Painted by H. Jones. *Facing page* 130

This is the second full species of its genus, found only in Japan, and showing remarkable little variation. As it prefers lowlands to the slopes of mountains, it is seldom found far away from the coast, and it chooses to visit the gardens of the farms rather frequently.

The last view I had of Kiji in their native home was on a perfect day in Kagoghima. I was returning from a long day's tramp after Ijima's Copper Pheasants, when for a few minutes a splendid cock Green Pheasant stood outlined at the summit of a gentle rise. The setting was: the deep blue waters of the bay, the pale blue of the sky, the clear green of graceful, aged pines, while over all towered the majestic, purpled cone of Sakuragima.

Plate LXI. REEVES'S PHEASANT *Syrmaticus reevesi* (Gray) . . *Facing page* 146

Painted by C. R. Knight.

Many years before it was seen alive this gorgeous, long-tailed pheasant was known from Chinese paintings, and was thought to be as unreal as the phœnix or dragon. Marco Polo was the first to describe the bird in life.

It lives in the very heart of China among the gnarled oaks and pines, and nests among the grass and azalea bushes. In spite of the long tail, sometimes six feet long, the Reeves is one of the swiftest and strongest flyers among the pheasants.

Plate LXII. PLUMAGES OF REEVES'S AND ELLIOT'S PHEASANTS

Painted by H. Grönvold. *Facing page* 154

Fig. 1. *Syrmaticus ellioti* (Swinhoe), Chick in down, one week old.

Fig. 2. *Syrmaticus ellioti* (Swinhoe), Juvenile plumage, white-throated phase, two and a half months old.

Fig. 3. *Syrmaticus reevesi* (Gray), Juvenile plumage, five weeks old.

Plate LXIII. SOEMMERRING'S COPPER PHEASANT *Syrmaticus soemmerringi soemmerringi* (Temminck) . . . . *Facing page* 158

Painted by E. Megargee.

Like the architecture of the Japanese, the solitary majesty of Fuji, the beauty of the cherry-blossoms, the delicacy of line of the tori—this pheasant seems a thing of unusual beauty.

As we see it beside a stream, or silhouetted against the misty grey slopes of the snow-covered mountain, it fairly glows as a mass of purplish carmine, changing at every turn to fiery gold. Its vitality is tremendous, and when a half-dozen cocks bouquet with a roar of wings from a plot of dry grass, the other beauties of Nippon are eclipsed.

Plate LXIV. SCINTILLATING COPPER PHEASANT *Syrmaticus soemmerringi scintillans* (Gould)
(Left-hand figure)

IJIMA'S COPPER PHEASANT *Syrmaticus soemmerringi ijimae* (Dresser) . . . . *Facing page* 162
(Right-hand figure)

Painted by G. E. Lodge.

As the northern Copper Pheasants are seldom out of sight of the cloud-swept snows of Fuji, so the southern satin-backed birds, by raising their heads, can always watch the billowing blue smoke from the waistcoat-pocket crater of Kirishima-yama.

Foxes, weasels and especially half-wild house cats are among the enemies which force these birds to roost in trees. In spite of their brilliancy of colouring, Copper Pheasants are able to keep concealed, and a pair or two may inhabit a tiny grove of trees or shrubs on the rocky summit of a hill, and remain quite unknown to the Japanese farmers whose fields surround them on every side.

Plate LXV. HUME'S BARRED-BACKED PHEASANT *Syrmaticus humiae humiae* (Hume) . . . . *Facing page* 176

Painted by G. E. Lodge.

The first hint of the existence of this pheasant—as in the case of the Mikado—was the presence of its long, purple-grey tail-feathers in the head-dress of honour proudly worn by a native chief.

The first specimens were obtained by some natives going into enemy territory and setting traps at the risk of their lives. They are not rare, but live in dense forests in the neighbourhood of streams, and only the isolation of their haunts makes their habits so little known.

PLATE LXVI. BURMESE BARRED-BACKED PHEASANT *Syrmaticus humiae burmanicus* (Oates) . . . . *Facing page* 184

Painted by G. E. Lodge.

It is seldom that these pheasants make their way down to the low plains, but even in their mountain home few specimens are trapped, as they have the habit of flying over the deadly bamboo fence of the natives, instead of attempting to walk through the dead-fall guarded openings.

I found them feeding on seeds and berries, and associated in pairs. They are shy, and a fleeting glimpse of a blue-headed, wine-coloured bird, splashed with white, was the usual result of a long and patient stalk.

PLATE LXVII. ELLIOT'S PHEASANT *Syrmaticus ellioti* (Swinhoe) . *Facing page* 188

Painted by L. A. Fuertes.

While not rare in captivity and breeding rather freely, Elliot's Pheasants are uncommon in all their wild haunts. Added to this, they are timid and unusually silent birds, and prefer to run than fly whenever danger threatens. Their patterns and colours form a complex design, which in brilliant sunlight is a very beautiful mosaic, quite unlike that of any other pheasant.

PLATE LXVIII. MIKADO PHEASANT *Syrmaticus mikado* (Grant) . *Facing page* 196

Painted by G. E. Lodge.

This bird received its name from two long, black, central tail-feathers taken from the head-dress of a Formosan savage. Later the same collector who obtained them was fortunate enough to secure living specimens of this splendid purple and black pheasant.

The birds appear to be confined to the region of Mount Arizan, in the centre of Formosa, at an elevation of six thousand feet and up. Among the oaks, pines and scrub bamboo clinging to the more or less precipitous sides of the great mountain the Mikado Pheasants make their home.

PHOTOGRAVURES

PHOTOGRAVURE 40. GARHWAL HOME OF THE KOKLASS PHEASANT

Photographs by William Beebe. *Facing page* 14

In May I found Koklass in pairs among the great forests of deodar, fir and oak in native Garhwal. On the steep upper slopes the trunks of these splendid trees all spring diagonally from the ground and at once make a sharp curve upward, standing straight as plummets—living guides to the angle of the slope.

The park-like spaces between the trees, thick with generations of needles, purple and white anemones and the abundant long-stemmed strawberry, are favourite feeding-grounds of the Koklass. Here they scratch deep holes in the débris of the forest floor in search of grubs and other insects.

PHOTOGRAVURE 41. WESTERN HIMALAYAN HOME OF THE CHEER PHEASANT . . . . *Facing page* 56

Photographs by William Beebe.

Where the spires of tens of thousands of deodars and spruce climb the mountains, and close around the out-jutting boulders, the hardy Cheer Pheasants spend their days, feeding, sunning themselves, or dusting their plumage at the very brink of the precipices.

The open slopes and cliffs are steep, and as I climbed them in search of the Cheer, I had to cling to the shrubs, bright with clusters of scarlet rhododendron blooms, and to the rocks to aid my unsteady, shifting footing. For yards I trampled on edelweiss and myriads of tiny, pale blue forget-me-nots, while on the shady sides of the rocks begonias carpeted the bare surface, their dainty pink blossoms waving on long, curved stalks with every breath of the mountain breeze.

PHOTOGRAVURE 42. NEST AND EGGS OF THE CHEER PHEASANT

Photographs by William Beebe. *Facing page* 62

High up among the tumbled mountains a slight depression is scratched among the ferns and spruce needles. It is usually close to the trunk of a tree, or beneath the protecting fronds of a deodar branch, and here the eggs are laid. The little dull-coloured hen sits closely, for the eyes of crows and monkeys are sharp and her plumage is much less conspicuous against the grass than the eggs.

PHOTOGRAVURE 43. ORIGINAL HOME OF THE ENGLISH PHEASANT, LOWER VALLEY OF THE SAFED RUD, BETWEEN THE CASPIAN AND THE BLACK SEAS . . . . . *Facing page* 76

Upper Photograph by General A. C. Bailward.

This particular spot is inhabited by the Talisch Caucasian Pheasant, *Phasianus colchicus talischensis* Lorenz, one of the three closely related forms living in the region between these two great inland seas. It was from this area that the Romans brought the first birds to Britain. The land is not fertile and is broken up by rivers, small during the seasons of dryness, but swelling into great torrents in the rains. The people are little changed from the times of old when the waves of emigrants swept first in one direction, then in another, and left this hinterland of Asia, the northernmost edge of Persia, wild and semi-civilized.

Here the pheasants still lay their eggs and rear their broods, just as their transported fellows do in the coverts of England and America.

PHOTOGRAVURE 44. HOME OF THE PERSIAN PHEASANT IN SOUTHERN TRANSCASPIA . . . . *Facing page* 86

Photographs by Dwight Huntington.

These birds live in vast plains either covered with reeds, or else bare, with the appearance of steppes, where also are found troops of wild boars, hyænas and great bustards. They feed on the juniper berries, and many fly at night for safety to the islands in the sluggish rivers to avoid their enemies, the cheetahs and leopards.

HOME OF THE PRINCE OF WALES'S PHEASANT, SOUTH TURKESTAN

The Murghab River is muddy and turgid, of the colour of poor coffee, flowing in a channel of brown clay, between high banks which are ever crumbling. In the spring the river becomes a terrible torrent, tearing through the desert with irresistible force, forcing all living creatures far from their normal haunts along its banks. Here this pheasant makes its home.

PHOTOGRAVURE 45. HOME OF THE MONGOLIAN PHEASANT, FEEDING-GROUND IN THE TIAN SHAN MOUNTAINS, BREEDING HAUNTS IN CHINESE TURKESTAN . . *Facing page* 98

Photographs by Dwight Huntington.

These hardy Ring-necks are found on tamarisk-covered sand dunes, where the birds can never even know what a tree is, or they inhabit half-floating reedy islands, or they haunt cultivated areas, while on the slopes of the mountains they range upward as high as four thousand feet, living, feeding and nesting among the conifers and poplar forests.

In the summer and autumn they wander far, but in winter the birds are compelled to search for the yellow berries of the thorn scrub, and are strictly confined to the areas where this edible grows.

PHOTOGRAVURE 46. HAUNTS OF THE TURKESTAN MONGOLIAN PHEASANT OR SYR-DARIA RING-NECK . . . . . *Facing page* 100

Photographs by Dwight Huntington.

Over the great, but little known region of Turkestan known as Syr-Daria, with its rugged gorges and snow-capped mountains, its scattered villages, fields of grain and herds of goats, the most western of all the Ring-necks is found.

It drinks at tiny meandering streams, which in spring become raging torrents, it gleans from the grain in autumn or scratches in the frozen ground in winter. Among the wind-blown sturdy shrubs or the long waving reeds it roosts at night, ever seeking to avoid the hosts of enemies which threaten it on every side.

PHOTOGRAVURE 47. MONGOLIAN PHEASANT . . . . . . *Facing page* 104
ZARAFSHAN PHEASANT
TARIM PHEASANT

Photographs by Douglas Carruthers.

The wildest and bleakest river basins of central Asia are inhabited by pheasants. Now and then a ragged caravan passes, hastening across the deserts, from one source of water supply to the next, a line of camels bearing tea or grain. When the rivers are in flood and spread out across the deserts, the birds wander far, and roost at night among the ruins of half-buried and wholly forgotten cities. Rarely an explorer makes his way through, mapping the valleys, shooting a few specimens, and passing on forever.

PHOTOGRAVURE 48. YUNNAN BLACK-NECKED OR STONE'S PHEASANT

Photographs by William Beebe. *Facing page* 108

This is the only member of the entire genus which occurs within the boundaries of British India. In Yunnan the bird is found in the same general environment as the silver kaleege pheasants. A hunter I knew drove a cock bird out of cover into a ploughed field, and a golden eagle made a swoop at it but missed.

Stone's Pheasant roams over the wooded heights of the maze of mountains along the Burma-Chinese frontier, and finds its food by scratching among the dead leaves and ferns of the forest undergrowth.

PHOTOGRAVURE 49. RING-NECKED PHEASANTS IN EASTERN CHINA

Photographs by William Beebe. *Facing page* 118

The pheasants of north-eastern China come down once a day to the rivers or creeks to drink, and then make their way back to the rolling grassy slopes where they nest and roost.

There were two nests of Ring-necked Pheasants in the grassy tangle foreground of the central photograph.

A full-grown cock pheasant is hidden in the centre of the lower photograph, the beak, white collar, back and upward-pointing tail feathers distinguishable. Although so brilliantly coloured, yet when partially hidden by the grass its patterns and hues merged perfectly with the lights and shadows of the vegetation. The bird did not flush until approached within a few yards, when it rose with a roar of wings, shot almost straight upward for thirty feet, and then off along the hill in the central photograph. Two hens were sitting on eggs close by.

PHOTOGRAVURE 50. THE BLEAK LAND OF CHILI, NORTH-EAST CHINA, HOME OF THE RING-NECKED PHEASANT . *Facing page* 124

Photographs by William Beebe.

The common Ring-necks inhabit three general types of country, dense reeds, along river banks, low rolling hills covered with scrub oak, chestnut and pine, or dense grass growing in irregular patches, and the flat paddy-fields.

Double broods are sometimes reared, the great majority of the chicks falling victims to rats, civet cats, foxes and weasels.

PHOTOGRAVURE 51. HAUNTS OF THE COREAN RING-NECKED PHEASANT

Photographs by Roy C. Andrews. *Facing page* 128

Typical pheasant country in Corea consists of hills fifty to five hundred feet high, with warm and deep valleys between. The hills are of red and yellow clay with little rock, and are covered on the side with bush firs two to four feet high, while the summits are sparsely wooded with larger trees.

In some localities fifty birds may be shot in a day. In the rice districts the pheasants feed to a large extent on this grain and on millet and small red berries.

PHOTOGRAVURE 52. HOME OF THE JAPANESE GREEN PHEASANT

Photographs by William Beebe. *Facing page* 134

The shores of the myriad lakes which surround Mount Fuji are often tracked up by small parties of pheasants which come down to drink. They wander only a short distance up the slopes and hide their eggs beneath some dense-foliaged pine, or close to a fallen tree or boulder. The breeding begins in March and extends through April and May, and only a single brood is reared in a season.

JAPANESE PHEASANT BY HOKASAI

Hokasai, who was born in 1760 and died in 1849, was the greatest of Japanese painters. He lived simply, worked diligently and painted many subjects, bridges, waterfalls, Mount Fuji, portraits and objects of natural history.

PHOTOGRAVURE 53. NEST AND EGGS OF THE JAPANESE GREEN PHEASANT

Photographs by William Beebe. *Facing page* 138

The nest is placed on the ground, without a special lining except for dead leaves and other debris which may have been in the depression when first occupied by the hen. The eggs are the smallest of all this group of pheasants, and vary in colour from pale stone-colour to dark brown.

The hawks, kites, crows, magpies, weasels and snakes are enemies both of eggs and newly hatched young birds.

PHOTOGRAVURE 54. HOME OF REEVES'S PHEASANT IN CENTRAL CHINA

Photographs by William Beebe. *Facing page* 150

The favourite haunt of the Reeves is in certain mid-reaches of the Yangtse where black, frowning cliffs rise sheer hundreds of feet above either bank, covered with gnarled, stunted vegetation which is deformed by the elements and scanty nourishment.

Once when a line of beaters was trying to locate a young tiger which had made a kill, two cock Reeves flushed suddenly, one of which rose straight ahead, high up over the pines, while the other bird doubled back suddenly and shot past with terrific speed, dodging the beaters and the trunks of the trees with such sharp turns that the long, flowing tail-feathers seemed fairly to curl around the trunks as the bird veered past.

PHOTOGRAVURE 55. JAPANESE HOME OF THE COPPER PHEASANT

Photographs by William Beebe. *Facing page* 160

These beautiful birds like the shelter of low grass and bamboo, and come into the open to feed upon grubs and insects and acorns. They haunt the same places throughout the heat of summer and the bitter winds of winter, often roosting in trees and feeding along the margin of streams, almost always within sight of the splendour of Fuji.

Photogravure 56. HOME OF IJIMA'S COPPER PHEASANT IN SOUTHERN JAPAN . . . . *Facing page* 170

Photographs by William Beebe.

The most beautiful spots beloved by Ijima's white-backed Copper Pheasant are carefully preserved because of regard for some ancestral shade whose body lies buried near by. Such a place has a carpet of ferns, bracken and soft bamboo grass, and a mid-growth of graceful camellias—the tsubaki of the Japanese—whose myriad scarlet bell flowers sway in the wind, their clapper stamens muffled with knobs of yellow pollen. High above all rises the great, evergreen expanse of camphor trees, in grace and size rivalling any grove of English oaks. A single leaf plucked from the mighty branches perfumes the whole glade with the aromatic camphor incense.

The upper photograph shows open Copper Pheasant country near the southern coast of Kiusiu, facing the great island volcano of Sakuragima. The lower photograph is a grove of camphor trees where several pairs of pheasants lived and roosted.

Photogravure 57. NEST AND EGGS OF IJIMA'S COPPER PHEASANT

Photographs by William Beebe. *Facing page* 174

This nest of five eggs was a late one, and possibly the second attempt of a hen whose earlier effort had come to naught through a marauding fox or raven. The nest was a mere depression near the base of a tall tree, and protected only by a few stalks of grass. The hen was not seen, although the eggs were warm when I first discovered them. She had slipped off and away while I was still at a distance.

Photogravure 58. HOME OF THE BURMESE BARRED-BACKED PHEASANT

Photographs by William Beebe. *Facing page* 186

My first view of this bird came when I was waiting for some silver kaleege pheasants to appear at their usual drinking place on the banks of a rushing stream. I was rather hopeless of any result, for I had been discovered and was being abused by a pair of squirrels and a mob of laughing thrushes, when a new voice was added to the general hubbub—a series of rapidly uttered chucks of alarm and suspicion from a low tree. A moment later, with a loud beating of wings, a Burmese Barred-back swung into view. It alighted on a stump, gave one glance in my direction, uttered a single loud *chack!* and dashed off at full speed.

The home of these birds consists principally of dense mountain-side forests, cut by tumbling brooks and streams.

Photogravure 59. HAUNTS OF ELLIOT'S PHEASANT . . . *Facing page* 192

Photographs by William Beebe.

High up on the semi-bare mountain sides, most elaborate and ancient Chinese graves are occasionally seen, beautifully carven, yet fitting harmoniously into their setting. One evening I saw a cock Elliot Pheasant make his way to the top stone of a graceful grave balustrade. After preening his plumage in the failing light, the bird hopped down and settled for the night between two carven blocks. Curiously enough, he roosted head inward, tail hanging down outside facing the slope, and, to my way of thinking, this was a great mistake, for any marten or other marauder could cut off the bird's only way of escape. However, the pheasant doubtless had his own good reasons for his reversed position. As I slipped away, the grave was beginning to be silvered by the moon, and I left the living bird and the carven phoenix side by side.

Photogravure 60. MOUNT ARIZAN: HOME OF THE MIKADO PHEASANT.

Photograph by W. R. Price. *Facing page* 198

The Mikado Pheasant lives among the wild fastnesses of Mount Arizan, Formosa. Dense forests clothe the steep slopes to the very summit, clinging to sheer cliffs, overhanging breathless gorges.

Here, from a mile and a half to two miles above the sea, in gloomy cypress jungles and among bamboo and rhododendron thickets, these magnificent velvety-black birds feed, and call, and mate, and rear their chicks. Where man can only cling, and creep with snail-like pace, the intimate life and habits of these pheasants must long remain a mystery.

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PUCRASIA
KOKLASS PHEASANTS

PUCRASIA

KOKLASS PHEASANTS

Order GALLIFORMES

Family PHASIANIDAE

Subfamily PHASIANINAE

Genus *PUCRASIA*

The Koklass Pheasants are birds of medium size, and impossible to place with any certainty in a linear scheme of classification. They show traces of resemblance to several groups, and in spite of the moderate length of tail of the cocks, perhaps come as close to the genus *Syrmaticus* as I have defined it, as to any other. The syrinx is extremely close to that of *Phasianus*. The head in both sexes is entirely feathered. The male has an elongated crest, and, owing to the posterior portion being of a different colour and sprouting rather densely behind the ear-coverts, this portion has been considered to be more of the nature of ear-tufts than a crest. This posterior crest, however, on examination is seen to extend clear across the occiput. The crest in the female is shorter.

Most of the body feathers are lanceolate. The tail consists of sixteen feathers, and is extremely graduated and wedge-shaped; the middle pair are slightly the longest, and about twice as long as the outer pair. The tail-coverts simulate the tail itself in their colour, great length and gradation.

The wings appear exceedingly long and pointed for a pheasant, owing to the fact that the primaries extend well beyond the secondaries when the wing is closed. The 1st primary is considerably longer than the 2nd, which is about equal to the 8th; the 4th is slightly the longest of the series. The tarsus is slightly longer than the middle toe and claw.

The sexes are unlike, but with not nearly so great a difference as exists in the case of many other pheasants. The male shows more solid, concentrated areas of colour, such as the bicoloured crest, the green head, and the solid chestnut ventral line. The male is armed with a moderately long and stout pair of spurs.

PUCRASIA

	Type
Eulophus Less. (nec Geoffr., Hym. 1764) Comp. Buffon, 1836, VII. p. 354	*P. nipalensis.*
Pucrasia Gray, List Gen. Birds 1841, p. 79	*P. macrolopha.*
Gallophasis Hodgs. J. As. Soc. Beng. 1843, XII. pt. I. p. 313	*P. nipalensis.*
Lophotetrax Cab. Ersch u. Grub. Encycl. sec. 3, 1846, XXII. p. 144	*P. macrolopha.*
Lochmophasis Heine, Nomencl. Mus. Hein. 1890, p. 298	*P. nipalensis.*

The Koklass Pheasants seem to present many difficult problems. The intricate colours and patterns of their plumage, the considerable variation and the wide and irregular distribution, all make toward confusion at first thought. In reality, however, when we eliminate the useless characters and right the errors due to hasty species diagnosis, the genus proves to be one of the most interesting of all the *Phasianinae*. Its various forms reveal one of the rarest phenomena in nature—a widespread series, showing delicately graduated and increasing complexity within a single, closely related group of living creatures. There seems no room for doubt but that we can trace almost the exact route which these birds have taken in past time, starting in Garhwal in the western Himalayas, and after a long trek northward, eastward and southward, reaching the sea-coast in south-eastern China.

I recognize the following three species, comprising ten subspecies of Koklass Pheasants.

Common Koklass Pheasant	*Pucrasia macrolopha macrolopha* (Lesson).
Kashmir Koklass Pheasant	*Pucrasia macrolopha biddulphi* Marshall.
Western Koklass Pheasant	*Pucrasia macrolopha castanea* Gould.
Nepal Koklass Pheasant	*Pucrasia macrolopha nipalensis* Gould.
Yellow-necked Koklass Pheasant	*Pucrasia xanthospila xanthospila* Gray.
Orange-collared Koklass Pheasant	*Pucrasia xanthospila ruficollis* David and Oustalet.
Meyer's Koklass Pheasant	*Pucrasia xanthospila meyeri* Madarász.
Joret's Koklass Pheasant	*Pucrasia xanthospila joretiana* Heude.
Darwin's Koklass Pheasant	*Pucrasia darwini darwini* Swinhoe.
Styan's Koklass Pheasant	*Pucrasia darwini styani* Grant.

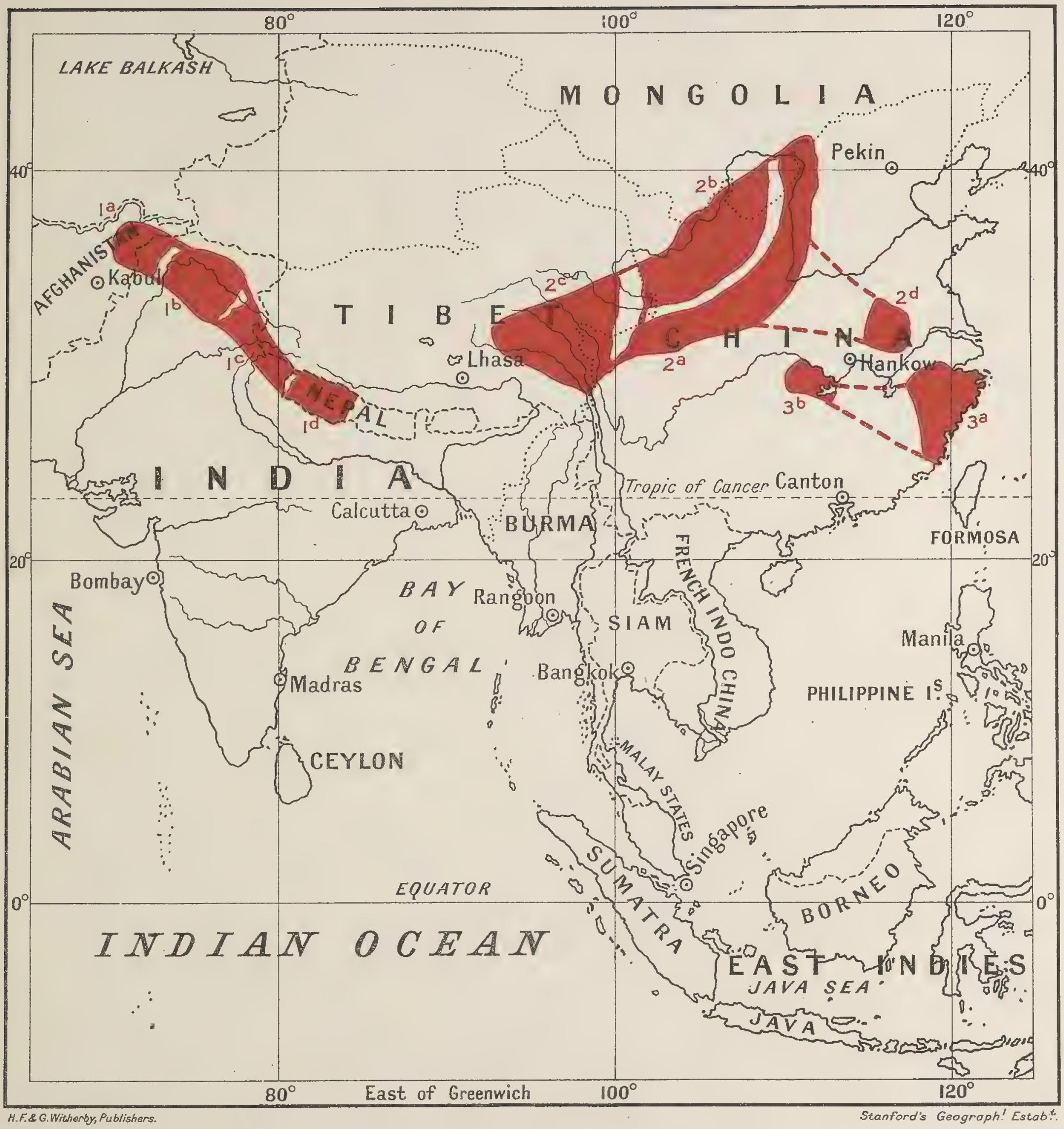
The character which seems of greatest convenience in the definition of full species in the genus *Pucrasia* is the mantle pattern, with its increasing complexity (extending also to the other parts of the plumage) in the males. In *macrolopha*, *xanthospila* and *darwini* this pattern may correctly be described as single, double and quadruple respectively. In *macrolopha* the mantle feathers are cold, ashy grey, with a wide black shaft-stripe extending almost to the tip. Careful examination of the base of the feathers reveals the fact that a white wedge has been driven some distance up the shaft, but this *anlage* of a splitting of the black stripe is not visible when the feathers are in place.

In *xanthospila* and its congeners the central wedge of light colour has spread up the entire vane, and there are two lines of black instead of one.

In *darwini* the third and most complex development of the pattern is found. Two additional lateral white wedges have appeared, splitting the two longitudinal black lines into four—the quadruple pattern. Thus the apparent development and route of geographical distribution must have been from *macrolopha*, through *xanthospila* to *darwini*.

The colour of the outer tail-feathers is unsatisfactory as a diagnostic character, although it is as strongly marked in the females as in the males. While showing great variation in the different species of *Pucrasia*, these rectrices also present equally wide extremes of colour and pattern within subspecific bounds, as in *macrolopha* and *castanea*, where the dominant colour is rufous and dark brown respectively.

MAP XI.


80°
100°
120°
LAKE BALKASH
MONGOLIA
Pekin
40°
1a
2b
AFGHANISTAN
Kabul
1b
2c
TIBET
Lhasa
CHINA
2d
2a
Hankow
1c
NEPAL
1d
3b
3a
INDIA
Tropic of Cancer
Canton
Calcutta
BURMA
FORMOSA
20°
Bombay
BAY OF BENGAL
Rangoon
SIAM
FRENCH INDO CHINA
Manila
ARABIAN SEA
Madras
Bangkok
PHILIPPINE IS.
CEYLON
MALAY STATES
Singapore
SUMATRA
BORNEO
EQUATOR
0°
INDIAN OCEAN
EAST INDIES
JAVA SEA
JAVA
East of Greenwich

H.F.& G.Witherby, Publishers.

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MAP SHOWING THE DISTRIBUTION OF THE KOKLASS PHEASANTS.

Region	1a.	Pucrasia	macrolopha	castanea	Region	2b.	Pucrasia	xanthospila	ruficollis
,,	1b.	,,	,,	biddulphi	,,	2c.	,,	,,	meyeri
,,	1c.	,,	,,	macrolopha	,,	2d.	,,	,,	joretiana
,,	1d.	,,	,,	nipalensis	,,	3a.	,,	darwini	darwini
,,	2a.	,,	xanthospila	xanthospila	,,	3b.	,,	,,	styani

KEY TO THE FORMS OF *PUCRASIA*

- I. A pair of spurs present (males).
  - a Mantle with a single black shaft streak.
    - *a′* Sides and flanks principally grey.
      - *a′′* No chestnut nuchal collar . . . . *macrolopha macrolopha.*
      - *b′′* Chestnut collar on nape . . . . *macrolopha biddulphi.*
    - *b′* Sides and flanks black, edged with grey . . . . *macrolopha nipalensis.*
    - *c′* Sides and flanks chestnut . . . . *macrolopha castanea.*
  - b Mantle with two black streaks.
    - *d′* A distinct nuchal collar.
      - *c′′* Nuchal collar yellow.
        - *a* Basal portion of outer rectrices dominately grey . . . . . *xanthospila xanthospila.*
        - *b* Basal portion of outer rectrices dominately rufous . . . *xanthospila meyeri.*
      - *d′′* Nuchal collar orange . . . . *xanthospila ruficollis.*
    - *e′* No distinct nuchal collar . . . . *xanthospila joretiana.*
  - c Mantle with four black streaks.
    - *f′* Ventral plumage more or less chestnut . . . . *darwini darwini.*
    - *g′* Ventral plumage not chestnut . . . . *darwini styani.*
- II. No spurs present (females).
  - a Base of outer rectrices black or rufous.
    - *a′* Outer pairs of rectrices with black contour markings . . . . . *macrolopha macrolopha.*
    - *b′* All but outer pair of rectrices with bar-like black markings . . *macrolopha biddulphi.*
    - *c′* All but outer pair of rectrices chestnut on outer web . . . . . *macrolopha nipalensis.*
    - *d′* Both webs of all outer rectrices chestnut . . . . *xanthospila meyeri.*
  - b Base of outer rectrices grey.
    - *e′* Black bars across tail complete . . . . *xanthospila xanthospila.*
      xanthospila ruficollis.
    - *f′* Black tail-bars broken or incomplete . . . . *xanthospila joretiana.*
      darwini darwini.

THE COMMON KOKLASS PHEASANT AND ITS ALLIES

The Koklass Pheasants of the Himalayas present a rather unique state of affairs. There is apparently little or no break in their distribution from Afghanistan or Kafiristan in the far north-west to central Nepal in the east. The Koklass inhabiting this area have been segregated under some four names. These have been taken to indicate distinct species, since, so far as I know, none has ever received a trinomial name, or subspecific denomination. After an exhaustive study of the living and freshly shot birds in their native haunts in the north-western Himalayas, and of the collections of Koklass Pheasants in many museums, both in America, Europe and Asia, it seems to me more logical to designate these forms as follows, giving them in order from west to east:

Pucrasia macrolopha castanea	Kafiristan.
Pucrasia macrolopha biddulphi	Kashmir.
Pucrasia macrolopha macrolopha	Chamba to Kumaon.
Pucrasia macrolopha nipalensis	Western Nepal.

My reasons, outlined in brief, are as follows. There seems little doubt but that *macrolopha* forms the centre of radius of all the adjacent forms of Himalayan and other *Pucrasia*. In a large series of skins from Kumaon and Garhwal are found very considerable variations from the more normal type, which are tri-radiate, pointing in these three directions:

Chestnut darkening ventrally and encroaching on mantle; pale back. Westward, toward *biddulphi* and *castanea*.

Chestnut darkening ventrally and encroaching on mantle; dark back. Eastward toward *nipalensis*.

Yellowing of the mantle. Northward toward *xanthospila*.

The typical *macrolopha* from Kumaon and Garhwal are undoubtedly the most generalized of the entire genus. Going westward and eastward from this region we find the birds becoming more and more specialized in colour, but not in pattern, until in Kafiristan in the one direction and central Nepal in the other the two extremes are reached.

In many specimens even from central Garhwal—the centre of distribution of typical *macrolopha*—we find distinct shaft-streaks of chestnut not only on the hind neck, but even low down on the mantle, and as we go westward the birds merge into *biddulphi*. In many pheasants from Koteguhr the ventral chestnut is very widespread and fully as dark as in *castanea*. The more extreme *castanea* forms vary much among themselves in this character, two which I have seen being exactly intermediate between *castanea* and *biddulphi*. Gould's statement that *castanea* is "altogether a stouter and larger bird than *Pucrasia macrolopha*," is wholly without foundation, and was probably based on the superficial appearance of his very much overstuffed type specimens. Careful comparison shows practically no difference in size, and where there is some distinction, the slight increase is in favour of *macrolopha*. There is no alternative but to give subspecific rank to these forms, although in this case even trinomials do not tell the whole truth, as *biddulphi* lies, geographically, between *castanea* and *macrolopha*.

East of Kumaon we find the Koklass Pheasants becoming more and more dark over the entire plumage, while the chestnut appears on and spreads over the mantle. Many of the so-called specimens of *nipalensis* from Jerulali, western Nepal and the vicinity are indistinguishable from dark-mantled *macrolopha* from Kumaon. No description has hitherto been given of the extreme *nipalensis* type; all relate to intermediate specimens. But even in this extreme there is not a single character which is not found in all conditions of gradation between the Nepal birds and the palest of Garhwal *macrolopha*. *Nipalensis* differs from the *castanea* off-shoot in combining intense melanism with increased general erythrism, while *castanea* exhibits the latter phenomenon only on the mantle and the ventral surface.

COMMON KOKLASS PHEASANT

Pucrasia macrolopha macrolopha (Lesson)

Names.—Generic: *Pucrasia*, the Latinized vernacular onomatopoetic name. Specific: *macrolopha*, Gk. μακρός, long, λόφος, crest, long-crested. English: Common Koklass or Pucras Pheasant; Garhwal Koklass; both names are onomatopoetic from the cry of the bird. French: Pucrasia macrolophe. German: Schopffasan. Native: Phocrass (Bhote Parganas of Kumaon and Garhwal); Koklass, Kokla (Almorato Simla); Koak (Pahari, Hindi, Kullu, Mandi); Plas, Kukrola (Garhwal).

Brief Description.—Male: Long crest buff and dark green; head and neck glossy dark green except for a large patch of white on the side neck; upper plumage and sides grey, the wings brownish, most of the feathers, with a single black shaft-stripe; centre of the breast and of the under plumage dark chestnut; outer tail-feathers black shading into rufous on the outer web, and tipped with white. Female: Short crest and upper parts dark, mottled with sandy buff, with a pale, reddish-buff shaft-stripe on most of the feathers; chin, throat and side neck whitish; below pale rufous, edged and mottled with black; outer tail-feathers mostly black, chestnut toward the base, and tipped with white.

Range.—Western Himalayas, from Chamba to Kumaon.

THE BIRD IN ITS HAUNTS

I reached out from my sleeping-bag and flashed the electric light at my watch. The hands marked three o'clock. It was early morning of the middle day of May. Then I shouted to my native boy, getting in reply a sleepy, "Yes, Sahib," and a deep-drawn sigh of despair expressing his soul's sorrow that such long hours of comfortable sleep should be sacrificed to merely watching—not even shooting—the pheasants of these Garhwalese highlands. After I opened the flaps of the tent and had a look at the splendour of the sky, I decided to go alone on this night's ramble, and accordingly brought joy to my servant's heart by sending him back to his blanket after he had brought me water and cocoa. But Hadzia the hillman loomed up in the darkness and without comment followed quietly after me. In my sweater and khaki I seemed to be a part of the cool darkness about me, and my leather moccasins made not a sound on the turf of the valley. Steadily I climbed up, up, to the saddle of the ridge and there squatted, Indian fashion, to get my bearings and decide upon my route. Day after day I had penetrated farther and farther into this Himalayan wilderness, with no halts for observation, and now that I had reached the haunts of not one, but three or four pheasants—the Koklass, the kaleege, the impeyan, the cheer—I gave up every particle of my being to absorbing the very atmosphere—their haunts, habits, life, that was what I wished to sense. To all intents and purposes I became a pheasant myself.

I seemed to rest upon the very summit of the world, a shrubby slope dropping away behind, and the deodar forest in front sloping downward, its file upon file of tall ghostly forms showing dimly through the translucent darkness. The stars were brilliant and the Milky Way showed like a luminous cloud. In the East the great train of

Halley's comet was drawn across the sky like a second Milky Way. At the apex the head glowed with a dull, pale green glare. It was the comet more than the stars which etched into the blackness of night, and when my eyes slowly readjusted themselves, brought many silhouetted details into view.

For a while no sound came to me from the night world all about, not a breath of air stirred the branches below me, and I watched the comet with an abstracted fascination which was almost hypnotic. Here was I in the twentieth century, gazing on this splendour of the heavens—a solitary scientist in the heart of this great wilderness of tumbled mountains. There came vividly to mind the changes which had taken place in the affairs of men on the globe since last its splendid train swept past our earth. This Asiatic continent was then all but unknown—as indeed its heart is at present—Africa was but a mystery; Japan a mere hermit nation of Mongolian islanders; Italy and Germany were not then kingdom and empire; the flag of Mexico flew over Texas and California; not a mile of railroad had been built in Europe; the telegraph and the "Origin of Species" were unheard of. Then my momentary dream passed, for an insistent call, a mysterious metallic double-note, came to my ear from the deodars, the low note or call of some creature—whether bird or batrachian I know not—which never ceased during this and other following nights, becoming an unnoticed background of soft insistent sound, from dusk until dawn.

I rose abruptly, and padded softly down into the forest of deodars and silver firs, the mighty columns rising from the steep slope out of a dense carpet of needles. The overhead foliage was scanty where I seated myself, and the branches and trunks stood out dimly in the diluted comet- and starlight.

Fifteen minutes elapsed and the eternal, mournful, four-toned call of the hawk cuckoo came from a distance. It was now four o'clock in the morning. I was startled by a sudden rush of some creature up the trunk of a tree close by. It ascended by starts, each movement sending down a rain of twigs and bark almost upon me. Then another animal climbed after it, this one steadily and more slowly. Their silhouettes against the sky enabled me to see that both had long tails. I watched silently. The second creature gained on the first and, suddenly, a dark form hurtled through the air towards me. It swooped between my head and the nearest tree, a claw brushing my cap as it went past. It crashed into a low shrub and clambered nimbly to the top. The second animal ran down the trunk a short distance, and also leaped or fell with even a harder crash on the other side of where I sat, tense with excitement. It ran to my very feet, when I flashed the electric light full upon it, and with a snarl it drew back, showing the sinuous body and flashing, cruel teeth of a pine marten. It slunk off into the blackness behind, but not before other actors had made their presence known. A third animal ran along a branch overhead and awakened pandemonium in the shape of a pair of Koklass Pheasants, which blundered off through the trees, squawking at the top of their lungs. Reaching the end of the branch, the great flying squirrel, for such it was, sprang into the air. In the dim night light its widespread parachute looked as large as a blanket, and I involuntarily dodged as, with a resounding thump, it struck the tree nearest flying squirrel number one. Then it called—a sudden, sharp, loud squawl, ending with a clear metallic note, repeated again and again. The other squirrel answered with an infantile whine, and I read the whole story—the almost tragedy which had been enacted in the gloom of the forest; the murderous pursuit of the marten; the awkward attempt of the young flying squirrel to sail to another tree; the daring but unsuccessful leap of the marten. Then the mother coming, not to the rescue, for these gentle creatures have no weapons of offence, but at least, relying on her activity, to scream her fury at the terrible pursuer. Her flight had been made between two trees at least a hundred feet apart. Passing against the stars I had seen her skilful twist and break as she steered unerringly for the trunk ahead.

Such was my first meeting with the Koklass Pheasant, although at the time, in the exciting onrush of the other creatures, the flight of the birds was momentarily forgotten.

On succeeding days I had many more chances of studying these pheasants, at times keeping them under observation for an hour, but though such opportunities yielded manyfold more actual facts of their life history, yet never did I feel a more intimate appreciation of the terrible dangers with which these and all the game-birds have to contend. Fast asleep on a high fir branch, amid the quiet in the dead of night, think of being stealthily approached by such a terrible enemy as a pine marten—a weasel many times exaggerated in strength if not in cruelty and cunning. Well is it for birds that nature has denied them the scent glands which makes it possible for beasts of prey to stalk their furry victims. How much more hopeless had the marten come upon the roosting pheasants in its wanderings than the more or less uncertain pursuit of the nocturnal, volant squirrels.

When all had become quiet again in the deodar forest, the dawn for a long time seemed stationary—only the ghostly, eerie comet-light sifting in and around the trees. I crouched down, with my back to the base of a giant spruce, and watched and listened. Unless, from such a position, one has observed the tiny moth millers in their nocturnal life, it is impossible to realize how different it is from their diurnal life during the hours of sunlight. In the day, if we see them at all, it is only a glimpse as they scuttle beneath a leaf or into a crevice. Now a score or more flew about me, their wings humming loudly as they passed my ear. I thought at first large beetles were flying about, but when a beetle really appeared the metallic twang of his bass-viol flight revealed the difference at once. The millers pursued each other, and flitted in and out among the twigs like the ghosts of butterflies. Now and then they alighted on the dead leaves and made remarkably loud rustlings as they walked about. At five o'clock the first buzz of a fly was heard; utterly unlike the subdued hummings of the nocturnal creatures; and at this tiny trumpet of daybreak, three or four species of birds broke into song, led by the double-phrase ballad of a tiny green warbler.

A Koklass Pheasant crowed from far up the mountainside, and two white-crested kaleege began to challenge one another below me. Then a chukor joined in, calling twice. The comet vanished; the East became a blaze of glory, blue and gold streaming over the mountains of Kashmir—and my first night with the Koklass was at an end.

GENERAL DISTRIBUTION

The centre of distribution of the Common Koklass Pheasant is Garhwal. Here the palest specimens seem to be found in greater abundance. Eastward it keeps more or less within subspecific descriptive bounds, until, about the Kumaon–Nepal frontier, it darkens into *nipalensis.* Westward, true *macrolopha* have been found as far as Chamba, but *biddulphi* characters also begin to present themselves strongly in this region.

GENERAL ACCOUNT

Within the area of the north-western Himalayas, inhabited by the Common Koklass Pheasant, the bird may be found from about four thousand feet elevation up nearly to the limit of the forest. This higher altitude is only occasionally attained, and by far the greater number of individuals live and breed nearer the lower level. This is, of course, especially true in the cold season, when the upper slopes are deserted and the Koklass wander downward, while those below go still further down in the valleys. At this time, owing both to the increase of numbers due to the young broods and the greater concentration of the old birds into a restricted area, Koklass are found in greater abundance than at any other time of the year.

At the lesser altitudes the birds delight in densely wooded valleys and ravines, but seldom are they found at the extreme bottom, unless transiently for the purpose of drinking, but usually halfway up the slopes. On these steeps, where the forest of deodar, oak and chestnut is mingled with yew and box, with occasional ringal bamboo, the Koklass feed and spend much of the day. If the ground is much broken up and rocky, so much the better. They seem to be fond of bold, outjutting terraces or boulders, and will sometimes spend days feeding in the vicinity of such a place.

In May, I found Koklass in pairs among the great forests of deodar, fir and oak in native Garhwal. On the steep, upper slopes the trunks of these splendid trees all spring diagonally from the ground, and at once make a sharp curve upwards, standing straight as plummets—living guides to the angle of the slope. Beneath them the ground is thickly carpeted with generations of needles, while here and there one comes upon a park-like vista clear of trees. In these open spaces, green lawn-like grass appears, dotted sometimes with large white anemones, with now and then one of deep purple. The dominant May blossom of these park-like spaces in Garhwal is a long-stemmed strawberry, of which untold myriads cover the turf so thickly that one cannot walk without treading many underfoot. Here at ten thousand feet elevation beds of tall saxifrage push up through the fallen needles and cones, their filmy heads nodding in the dim forest light. Here come the Koklass in pairs at this season, or the cock alone, if his mate be sitting, and scratch among the needles for grubs and other insects, and here in early morning one hears their loud, hoarse challenging, *Ah! croaak! croaak-croaak! crok!* the last note much lower and inaudible at a distance.

Titmice, nuthatches and tiny grass-warblers twitter and sing among the needle-foliage overhead, yellow grosbeaks follow the drifting fir-seeds to the ground, while in all the more open spaces flocks of Indian wood-pigeons glean—now and then rising with loud sudden smack of wing and a flashing white of tail-tip.

The flowering vines are beautiful at this season, whorled clusters of chaste snowballs climbing over the delicate maroon-coloured young oak leaves, and five-petalled clematis draping shrubs with masses of shining white stars, and mingling its sweetness with the rich aroma of the deodars.

As one walks slowly along the steep, slippery slope, a family, or rather mob of white-throated laughing thrushes may fly up from the ground. They hiss and *seeeep!* and at last pour forth their hysterical, irritating chorus of guffaws, until one gladly hastens out of hearing. When a pair of these birds, nest-building, is encountered, they utter not a sound as they fling themselves quickly out of sight. Another common ground-feeder in these haunts of the Koklass is the great Himalayan grosbeak. The males in gay yellow and black, the females in sombre grey, fly up from their feast of conifer-seeds, and then from the tree-tops comes their loud, hollow *che-che-ult!* Through the forest aisles there flashes now and then the scarlet gleam of a male minivet, and in a momentary cessation of his lofty fly-catching we hear his musical, whistling trill.

Until one sits down in the probable path of Koklass and waits patiently, one does not notice the strong undertone of sound—the hum of a myriad flying things. It is impossible at this season to find a spot at midday either in sunshine or shadow free from insect pests. They search one's face and eyes with fiendish persistence. Little yellow diptera are very bad biters and their punctures give trouble for days. Then there is a tiny villain whose attack you do not notice until he is almost ready to depart, when a sudden sharp shooting pain may make you flinch at a critical moment of observation, perhaps alarming a pheasant whose approach you have long awaited. There are no mosquitoes, and the mornings and late afternoons among the deodars are perfect.

When we have concealed ourselves amid the saxifrage and star-flowers and judged our position well, we may be fortunate enough to see a pair of dark objects some distance down the slope, through a vista of trunks. Resting the glasses in a chink of branch and trunk and focussed on the pair of Koklass, we settle for a long period of watching. Every movement shows how wary they are. Were we to raise but a finger in air they would be off like shots.

The cock scratches with one foot, and with a low chuckle calls his mate. They feed busily for a few minutes and then a fir-cone falls with a thud near them. They spring two feet into the air, but recover themselves instantly, so keen and quick is their discrimination between real and seeming danger. Later a faint crash reaches our ears and both birds stand at full height on tiptoe, their half-raised crest making them the very personification of concentrated attention. Another and another crash and swaying of branches announce the approach of a troop of langur monkeys, and as they pass close on one side, the pheasants stand motionless until the last youngster has swung himself from sight. Then the birds move slowly to one side and out of my line of vision.

Ordinarily the Koklass is shy and rather solitary, in the sense that it is adverse to gathering in large flocks even to feed like the impeyan. On the other hand, it is pre-eminently monogamous, and the pairs remain together throughout the year, so that there is no doubt but that the birds pair for life, which unfortunately in the majority of cases means probably for only one or two years.

In the cold season, when concentrated as I have described, numbers of old birds may sometimes be flushed within a short distance of one another, but even here there is obviously no true flock attraction, the birds going off in different directions and seldom giving the flock call, which is so common an utterance with such birds as blood pheasants. The broods of young birds do seem to remain in more or less close association until early spring, when they separate and pair.

At other than the cold season, more than two Koklass are hardly ever found together, while a solitary bird is almost certain to be an unmated bird of the year.

The voice of this pheasant is very characteristic, and in spring the first morning after one pitches camp in some new region, the presence or absence of Koklass is indicated by the early morning crow or corresponding silence. In places where there has not been much shooting, the voice of the cock is always at hair-trigger poise. After the report of a gun, every bird within a half-mile, or anywhere within hearing, will instantly crow, and the same is true of a clap of thunder. They keep this up with great persistence, and after even half-a-dozen peals of thunder, or ten or twelve reports of a shot-gun, the crows are as numerous and vigorous as ever. I have heard dozens of Koklass crowing, and after many attempts I find that the best translation I can make is that which I have already given, *Ah ! croaak ! croaak-croaak ! crok !* the last note being uttered very low and apparently with the last of the exhaled breath.

On the conifer and oak-covered slopes the Koklass feed slowly upward from the water at the bottom, often passing up narrow, deep-sided ravines. At such times the birds are almost always in pairs, and the male usually feeds in advance of the female. When engaged in feeding the birds are very quiet, only now and then uttering a low cluck or chuckle.

Once at a low elevation I came upon a hen Koklass with her partly grown young, while the cock was some hundred feet farther up the slope. The moment my dog appeared the male flew into a tree, crying loudly, *kuk ! kuk ! kuk ! kuk ! ko-ka ! ko-ka ! ko-ka !* for a minute or two, the utterance then gradually dying away into *kok ! kok ! kok ! ko ! ko ! ka !* This was evidently a warning, as the female and chicks squatted at once and did not move until the dog blundered upon them. When Koklass are flushed suddenly they usually, but not always, give utterance to considerable outcry, unlike the kaleege pheasants. The crow of these birds has much the same quality of tone as the croak of a raven, but the tempo is always the same, the broken note, when heard indistinctly a long distance away, recalling the crow of a junglefowl.

Koklass have a slow, dignified gait, dainty and cautious when on their uphill feeding journey, more rapid when making their way down to water. When running, as they often will from a dog or other danger which they perceive in time, they stretch out the neck and tail and make great speed. I have seen them swerve from their path in rather open places to run along behind a fallen log. When they think they can escape unseen, both cock and hen will crouch close to the ground, but when the dog is near enough to be dangerous, they fly up into the tree overhead, either silently or with a burst of chuckles. But when a man appears, especially if the region has been shot over, they waste no time, but leap to wing at once. They fly downward if possible, beating rapidly and dodging skilfully if tree-trunks are numerous. On a long, steep, sheer open shute or valley, the Koklass half shuts its wings and literally drops like a stone, so rapidly that the eye can scarcely follow. In such a place, they give a few whirrs at the start, but after that gravitation is their sole motive power.

The food of the Koklass is varied, but those which I observed seemed to prefer insect food to all else and spent much of their time in search of it. But no edible vegetation is refused, whether roots, acorns, seeds, berries, leaves, buds, flowers or moss. It seems to eat less grain than the other pheasants, and is never found in the grain plots of the natives. Indeed it shuns human habitations of all kinds, and, unlike the kaleege, soon becomes scarce wherever mankind makes a permanent settlement. In Garhwal I found that it was not an uncommon habit for Koklass to go out on the open rocky slopes in pairs and scratch deep holes in the turf. This was in impeyan country, and in one case an impeyan scratching ground was located within a quarter-mile of the isolated grubbings of a pair of Koklass.

I think that this pheasant invariably roosts in trees. I have found them well up in dense conifers, and they return night after night to their favourite perch. In the spring at least they roost in pairs, or the male alone when the female has begun to sit. He crows usually before descending to the ground. Out of five birds which crowed regularly within hearing of one of my camps, I found that at least four gave utterance from their roosting-perch. This was easy to prove by creeping very carefully up behind the tree in which, from the sign, I already knew the roost to be located, and ultimately flushing the crowing bird. These birds began as early as 5 a.m. and isolated crows sometimes were given up to 7 o'clock. But by 6 a.m. most of the *croaaking* was usually over.

Several times I have seen laughing thrushes closely associated with Koklass, once with a pair and again with four birds apparently of one family. When going down to drink in the afternoon the pheasants move slowly but quite steadily, feeding here and there in their path, but seldom turning far to one side except to pursue a flying moth or other insect. The thrushes work downhill close to the pheasants and share the disturbed insects. Now and then they mount a bush and look about, getting a wider horizon than the terrestrial pheasants. The efficacy of this association was more than once apparent, when the smaller birds discovered me and shouted their discovery at the top of their lungs, flying off along the hillside. Whether by accident or intention, the pheasants both times ran swiftly off in the same direction as the flight of their small companions, although they themselves had no knowledge of my hiding-place except through the alarm of the laughing thrushes.

The Koklass suffers from the same enemies as the impeyan and kaleege. My only definite evidence was of a lot of scattered Koklass feathers, surrounded by the fresh tracks of an Indian marten, a killing which had taken place the night before.

The Nepal hawk-eagle and the leopard-cat are probably the most dreaded of the animate dangers by which these pheasants are surrounded.

HOME LIFE

Although the Koklass may be found from three or four thousand feet up to thirteen thousand, the breeding zone is much more restricted. The birds at the lower elevation are those which wander downward in mid-winter, while those which are seen at the upper limits of forest are only strays, perhaps unmated, which have found food abundant at such extreme heights. Nests have been found between five and ten thousand feet. All which I discovered were about seven to nine thousand. Nearer the lower elevation the nesting season begins about the third week in April, and from here

GARHWAL HOME OF THE KOKLASS PHEASANT

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The park-like spaces between the trees, thick with generations of needles, purple and white anemones and the abundant long-stemmed strawberry, are favourite feeding-grounds of the Koklass. Here they scratch deep holes in the débris of the forest floor in search of grubs and other insects.

PHOTOGRAVURE PLATE 40

GARHWAL HOME OF THE KOKLASS PHEASANT

upward we find a gradually retarded period until the middle of June sees the last laying on the upper slopes. The second and third weeks of May mark the height of the season when the great majority of Koklass begin to sit.

As we have observed, Koklass are strictly monogamous, and the cock apparently does not go far from the vicinity of the nest during the weeks of incubation. At least in several instances, I found them morning, noon and evening always within a hundred yards, and frequently closer to their patient mates. One would never know from their actions that a nest and mate were near. They are very wary, and when disturbed invariably give utterance to some sound, either of suspicion or fear, apparently for the benefit of the sitting bird. At other times of the year this is not always the case, and they may be flushed without uttering a note. The cock joins the hen and her chicks when these are hatched, and assumes his full share of duty in caring for them.

The choice of a site is rather varied. It may be in the very heart of a patch of low undergrowth, or in the shelter of a mossy boulder or close to a tree-trunk. I have seen them with only fifteen-inch grass to shelter them from the open sky, although the grasses were somewhat arched over the sitting bird. I have never seen any evidence of an actual hole scratched in the ground, as is mentioned by several observers. The nests I have seen were depressions in the turf made only by the weight and constant shifting of the bird's body. In one instance where the nest was on a slope, the depression was so shallow that one of the eggs had rolled a foot away, and the embryo was dead. The only lining appears to be the grass, leaves or moss which were on the spot when the bird began to lay. These soon die and become pressed down into the form.

I have found two, six and seven eggs, the former an unfinished set. Nine is the largest recorded number, and seven seems to be the average. The eggs are of a regular oval and quite glossy. The ground-colour is a rich creamy buff and does not exhibit very much variation, sometimes being a little darker than usual. The markings, however, vary to a very great degree, although I do not find any division into the two general types of which Hume writes. Between the two extremes all intermediate phases of marking are to be found. The eggs from any one bird are usually quite similar, however, and it has been observed in captive birds of another species kept in China that this correlation between an individual and a certain pattern of egg persists year after year, even in spite of changed food and aviary.

Against the creamy buff background are handsome dots and blotches of a deep reddish or chocolate brown, which in the centre of the larger spots is almost black. One extreme of marking occurs where the reddish pigment is in the form of small dots no larger than the head of a pin, and so thickly and evenly covering the whole surface of the shell that the spaces between the dots are no larger than the dots themselves. This is rather rare. The other extreme is where the pigment has run together into a few irregular spots and blotches, with the remainder of the shell almost unmarked. The finer-marked shells look like diminutive turkey or impeyan eggs. There is a good deal of variation in size, the length varying from 47 to 57 mm., and the breadth from 35 to 40 mm. The average egg is about 52 × 37 mm.

The Chinese species of Koklass have been more often kept in captivity than the Himalayan ones, but all are very rarely brought out of Asia alive, and it is seldom that a living specimen can be secured. No living Koklass has ever been brought to

America, and of *macrolopha* only three individuals are recorded as having been kept in the London Zoo, the last over forty years ago, one of which lived three months.

KOKLASS SHOOTING

Advice to which I can heartily subscribe is given to sportsmen by Hume when he says, "Unless you are a man of iron, able to walk 40 or 50 miles up and down without fatigue, and able to go uphill just as well as downhill, it is all nonsense going pheasant-shooting in the Himalayas without the necessary aids and in the proper manner.

"You must have good dogs (small cockers are best), thoroughly under control, who will work exactly to command, and obey the whistle, and you must have a number of intelligent hillmen, something of sportsmen themselves, to search out the shooting-grounds, and when you are shooting, *mark* the birds that get away from well-chosen posts. I used to have four dogs and over a dozen men.

"Lastly, you must go in for small game as your object, and not humbug after big game. If a kakur jumps up in the grass before you, roll him over with shot. Have a rifle along with you, and if in beating a gloomy ravine for hill partridges an old sarrow or a precipitous *dang* or cliff for cheer a gooral or two break, do your best with them, and if when high up after moonal or tragopan or snow cock, a tahr or burrel gives a chance, by all means take it. But if you really want to make bags of pheasants and the like, you must make them your object. Of course, too, you must get right away from hill stations and avoid lines on which other people have been recently shooting; but the hills are so vast, and so very few men, even to this day, go in earnest for small game, or can get leave in the latter part of October and November, which is the real time for pheasants, that this is easy."

Owing to the shyness of the Koklass pheasants and their solitary nature, combined with the difficulty of pursuing them in many of their steep haunts, these birds will probably be able to hold their own for many years. Many sportsmen have written of the great difficulty of shooting more than a brace in a day, but occasionally one may have better luck. An anonymous writer has given an excellent account (Jour. Bombay Nat. Hist. Soc. XIX., p. 797) of such an experience which is well worthy of reproduction, as a sidelight upon the Koklass from the English sportsman's point of view. "There is a tremendous amount of luck in the sort of shooting I am about to describe, and a lot of hard work. About 4.30 a.m. I hear a voice which says: '*Sare char bajee*,' and it seldom has to be repeated for me at this time of the year, which is October, as previous shooting and prospecting seems to have sharpened my senses; possibly exercise has made my liver a few sizes smaller, hence I am less somnolent. It will not be light until 6 a.m., but I like to have plenty of time over a light breakfast, as I shall not eat again until 12 noon; also there is a long tramp before the shooting-ground is reached; 5.15, and I am ready for the khud side. My two companions for the day are a sturdy hill native and a little brown-and-white spaniel, the sort so common among the men in the British regiments in the Punjab. She was selected when six weeks old, and commenced her training shortly afterwards, and is now almost perfect as a gun-dog. The brilliant moon which now lights our way as we scramble up a narrow hill-path was not in evidence when I retired to bed at 10.30 last evening, but now it is so bright that even under the trees we are not quite at a loss to follow the narrow path. The hillman goes first, as in spite of numerous tramps of this kind, I know the native of the soil will follow the main path much better than I can, and will lead me to our destination in spite of various cattle-tracks that criss-cross our road, which is, after all, only a rather larger cattle-track. The average hill native has an eye for hilly country that the British-born ruler of the land will seldom equal in spite of much practice. It is not surprising, as most of us are brought up under widely different circumstances.

"In the meantime, we have travelled a long way, and the stars in the East are paling and the moon begins to have a wash-out appearance; however, we can take it easy now, as we are quite high up enough for the Koklass. A few minutes later the small birds begin to chirp, and along the crest of the hill we are on comes a fresh breeze in fitful gusts, the usual harbinger of dawn at these altitudes. It will die away soon, and in fine weather the leaves hardly stir again until the evening. The breeze brings down a few brown and curled silver birch leaves, making one think of autumn, and I could wish many more of other kinds were down as well.

"We push on a bit and reach a small plateau, the head of three nullahs, and now, as the light grows stronger every moment, we sit down to listen, hoping to hear the prate, prate of the Koklass somewhere below us, and shortly after the wail of the last marauding jackal has died away, far down in the valley below, we hear the longed-for sound, something like, only far softer than that emitted by the bazaar moorghi, when she is looking for a place to deposit her egg, not like the cackle she makes when it is laid.

"Now we must be as quick as possible, or this will be the only brood we shall hear calling. We hastily look round for the easiest way to them, and then the native beckons me and we make off. He well knows I wish him to keep wide of them until well beneath them, and then work up towards them. In ten minutes we are below them, and then we proceed more cautiously down into the bed of the now dry torrent. Here I halt, and turning round, meet the bright, questioning eyes of my little spaniel; no need to speak; a wave of the hand and she is off, going at full speed. She makes a cast one hundred yards in front of us, and a little above, and then returns going at top speed all the time until reaching a ledge in the middle of the water-course, she suddenly stops and turns. A two seconds' examination of the ground with her nose, and she goes straight up the nullah bed and is soon lost to sight amidst boulders and overhanging foliage.

"I hear nothing for a minute, and then yap, yap, with a peculiar intonation that I know means 'pheasant running ahead of me,' as well as if she spoke. The next second there is a whirr of rushing wings, and out dash two birds almost simultaneously. They are straight above us, and must see us immediately they clear the tree-tops, but not a jot do they care, their object is the khud below us, and down they come, straight as a die, with outspread, motionless wings. I shoot at the first far in front, as I know from experience I shall have to turn my quickest to get a shot at the other. As I turn, the first bird hits a rock by my feet, the second bird was still clear of trees when I fired, but he disappears, but, greatly to our surprise, we see him again for a second as he tops the trees, moving straight upwards, and then turns over and falls with a crash. This is a bit of luck, for had he not towered we should have lost him.

"The spaniel has meantime rushed down to us, noses the bird near my feet, and then her eyes follow me. She hears the crash below and is off. I tell the native to follow, as it is far down, and the bird is large for her to carry; but she appears again in a few minutes and lays the bird at my feet, and then lies panting and wagging her tail. I whistle for the native and he returns, and picking up the birds makes his way after me, scrambling up the torrent bed. On reaching the place where the birds rose, I again wave the spaniel forward; she dashes hither and thither for a minute and is then off again towards the crest, and very soon there is another yap, yap, and I get a glimpse of a bird topping the trees and then just time for a snap as he swishes past me, this time between the trees. I cannot hear or see any result, but will look later, as the spaniel, instead of returning to me, remains above, giving a harsh woof every few seconds.

"I know what that means well enough. One of the birds is sitting on the lower branches of a tree, probably wondering why this funny-looking new sort of jackal is behaving in such an unusual manner, and thinking everything is not as it should be, makes up his mind to join his companions below. I am warned by a flutter and the change in the dog's voice, but before I can get myself into position to shoot, the bird is past me and goes on its way rejoicing.

"Now, although it is a long way back, I do not like leaving the bird I shot at without having a look round where he might have fallen, as I was pretty certain I was on him when I pulled the trigger; so down we go again, but all we find are two or three feathers, so we conclude that probably, if he fell at all, it was far down in the valley below, and I console myself by thinking if he is badly wounded he will make a good meal for some jackal to-night, and not be left long to linger in pain. The sun must be up by this time, but we cannot tell for certain here, as the nullah is on the north side of the ridge. We make our way over a ridge, intending to enter the next small nullah, scarcely hoping now to hear birds calling, as the time for this is nearly over. However, we are pleasantly surprised, and are soon off after another 'snide,' fortunately in a splendid place—a small plateau covered with bushes, overhung by an almost perpendicular piece of khud.

"On coming below the plateau, I rest a minute for breath, and then push on, waving the little dog forward. These birds have evidently been running about all over the place, feeding, and the spaniel clearly shows by her flashing stern and eager movements that scent is abundant, but she finds a difficulty in hitting off the line. The next second she stops dead before a bush, looking over her shoulder at me, and at my nod dashes in, and out bundles a young Koklass, which, rising ten yards from me, makes off, but gets no further than the edge of the plateau, probably as easy a shot as one ever gets at a Koklass.

"The faithful spaniel retrieves the bird and then returns to the bushes, and after some feathering around, strikes a line for the steep khud side. Up and up she bounds, never missing her footing and never faltering. Now she is lost from view, but a second or two later her voice is heard, and almost at once out hurry three birds; the first shot crumples up one as he comes towards me, the second is nearly overhead as I fire, and he goes on apparently unscathed. We clamber up by a circuitous route and arrive at the top of the ridge again, and sit there for a minute wondering which will be the best way to go now, as the sun is well up, and there is no chance of hearing any more birds calling.

In the distance we hear the tap, tap of the woodman's axe, and soon a mighty crash denotes that some stately Paluda will no longer grace these mighty forests; but, what is of more immediate interest, following on the crash there rings out the cry of several male Koklass far down in the valley below. The cry is far different to that of the bird found in English coverts. All the same, they respond to the same stimulus as their distant cousins in their western home; for who has not heard the cock pheasants in a home covert set crowing by a sudden noise, such as the first clap of thunder of a storm?

"This determines our way, so down we start until we come to a path my man knows of. The spaniel is encouraged to range chiefly above the path, as if she flushes any birds below they will most certainly escape unshot at. We work along round the valley, but although we know there must be birds somewhere, the little lady cannot find a scrap of scent until after a long search. On rounding a bend, she suddenly makes upwards, and I lose sight of her. A long wait, and then a distant yap; a minute later and a dark form is seen gliding downwards between the trees and curving away towards the side of the nullah. I fire as he comes, but the intervening branches are the only things at all injured, so I swing well ahead and fire again, but only realize as I press the trigger that the bird is putting on the brake hard, with the intention of alighting on the side of the nullah. Down rushes the spaniel, panting and exhausted. I show her a pool of water, in which she wallows for a moment and then jumps out refreshed and ready for anything, so I put her on the place where I last saw the pheasant, and without hesitation she dashes up and over a ridge dividing this from the next small nullah. I follow round below her hastily; three, four, five minutes pass, and I have visions of her lying beside a dead pheasant that she is too exhausted to carry; but not so; she again gives tongue, and again the wily old bird dashes down. I swing on to him, and continuing the swing, catch him in the open space between two trees, although at the moment of pulling the trigger I could not see him. What a handsome bird and what spurs! Even a game cock might have envied them.

"On retracing our steps (this bird had gone back) I notice the rotting trunk of a tree with small pieces of rotted wood scattered underneath it. I pause to examine it, and the hillman says that is what the pheasant was feeding on, and went further to explain that large insects bore holes in the rotten wood, and the pheasants dig them out and eat them. A further walk along the path and a stiff climb up to the ridge and another cock pheasant is added to our bag, and yet another got away unshot at; there did not seem to be anything but solitary old cocks here.

"Now for some light refreshment and a rest for a couple of hours in the shade, then I wake my slumbering companion, and we proceed, plunging downwards through the jungle, reaching a well-worn path after an hour's tramp."

DETAILED DESCRIPTION

Adult Male.—Mid-crown ashy brown, becoming buff on the rear crown where the feathers are elongated in a rather stiff, long and slender crest. Immediately behind these sprouts a series of still longer, narrow, black feathers, glossed with shiny green, which form the posterior and greater part of the crest. Some of these plumes are 100 mm. in length, growing directly across the occiput, from one patch of ear-coverts to the other. On the side of the neck is an elongated broad patch of pure white, and the under eyelid is of the same colour. All the rest of the head, chin and throat is black, richly glossed with dark green.

On the hind neck beneath the crest the glossy green feathers change abruptly into the typical dorsal pattern. This is a cold ashy grey, with a fairly wide black shaft-stripe extending almost to the tip. The feathers of the entire body plumage are quite lanceolate and acutely pointed. The grey of the lower back, rump and sides takes on a pinkish-white hue, and on the back a fine, narrow white shaft-stripe partly splits the black of the feather. On the rump, which in typical specimens is predominately ashy grey, a single line of peculiar feathers extends down the centre. These have a shaft-stripe of buff or rufous with a broad black line on either side. It is seldom that they appear in perfect alignment.

The wing-coverts and scapulars are distinct in shade from the mantle, being of a more olive or brownish hue on the exposed portions, with considerable rufous on the inner webs. The scapulars show a great extent of black, the olive being confined to the margins. On the inner margin of the wing a rufous shaft-stripe appears, and on the innermost secondaries only the terminal portion of the feather is ashy, with a large elongated black spot or ocellus on the outer web, all the remaining part of the feather being rufous, irregularly mottled with black. As we proceed outward along the line of secondaries, the black increases and solidifies, until the pattern alters to a regular dark-brown feather, a narrow, pale rufous shaft-stripe, and a very distinct ashy-buff margin to the outer web. The inner four primaries are almost monochrome dark brown, but on the outer six the entire outer web is ashy pink, the outermost showing it rather less distinctly than the others.

The shorter upper tail-coverts are like the rump, but on the longer ones rufous obliterates the black, and we finally have a rufous feather with an indefinite tinge of grey on the margins and tip and two faint lines of dotted mottlings down the centre of the web, indicating the last of the black pigment.

There are eight pairs of strongly graduated rectrices, the central pair being almost twice the length of the outer one. This central pair closely resembles the longest upper tail-coverts, except that the rufous is still stronger and the grey correspondingly fainter. The succeeding seven pairs are rich chestnut on the outer web, with the inner web and a large distal area black. Each feather is tipped with a narrow band of pure white.

The green gloss of the throat shows on its posterior area a narrow fringe of dark chestnut, and on the lower throat this colour increases abruptly. In many adults this hue covers much of the ventral surface. In such individuals it extends dorsally on the neck as a semi-collar as far around as the posterior portion of the white patch. On the side breast, sides and belly it passes at once into the dark-centred, ashy, dorsal pattern, the transition feathers being chestnut on the inner web and black and ashy grey on the outer. On the lower belly the chestnut colour area narrows to a constricted line, which extends as far back as the under tail-coverts, which are dominantly chestnut, with slight lateral black mottlings, and often with more or less white near the tip. On the lower belly the place of the chestnut is taken by the typical black-centred grey feathers. This ventral chestnut area is extremely variable, measuring in width from 40 to 90 mm.

The mandibles are solid black, or dusky black, the legs and feet uniform dark brownish in dried skins. In living and freshly killed birds there is considerable diversity in the colouring of the hind limbs, varying from dark bluish or greyish horny to a dull ash colour, sometimes with a faint pinkish tinge. Irides dark hazel. Weight, 2 lbs. 2 ozs. to 2 lbs. 14 ozs.

Bill from nostril, 15 mm.; length 580 to 640; expanse, 730 to 760; wing, 235 to 255; tail, 235 to 285; tarsus, 70; middle toe and claw, 60.

VARIATIONS.—A typical individual of *macrolopha* (typical solely because farthest from both *castanea* and *nipalensis*) has *very* narrow shaft-streaks on the mantle feathers, which diminish posteriorly on the plumage and disappear entirely on the lower back and rump, the feathers of these parts being uniform grey. In fact, the central black is narrow everywhere, and the chestnut of the lower plumage is confined to a broad line down the centre of the ventral surface, while all the sandy areas, especially on the lower surface, are clearer and whiter.

This is not the commonest type of individual, but may be considered as the most generalized and typical of *macrolopha macrolopha*.

Elliot's plate of *macrolopha* shows a bird much too dark for a typical representation. The splitting of the black lines is also atypical, and the upright segregation of the green portion of the crest is an error, the bird not being able to manipulate its occipital plumage in this fashion. Gould's plate is excellent.

ADULT FEMALE.—Crown and occiput black, with a single cross-bar and a broad terminal band rufous buff. In worn specimens the buff tips disappear, leaving these parts quite black. A short, but well-marked occipital crest, varying from brown to warm rufous, the feathers margined or slightly mottled with black. Forehead, broad superciliary extending back to the crest, and the face pinkish or yellowish buff, most of the feathers with a dark band half-way to the tip. Full-plumaged birds have a broad band of feathers starting just behind the eye and extending back, including the ear-coverts and a nuchal zone posterior to the crest, glossy green, with one or more cross-bars of buff. Chin and throat white, with an irregular line of brown dots down each side from the base of the mandibles. These dots coalesce and become solid black margins on the side throat and extend in a band across the posterior margin of the white gular area. The white zone above the two dotted lines extends across the lower cheeks and back over the side neck as an elongated patch of white, ending beyond and just below the ear-coverts.

The upper neck is pinkish buff with irregular bands of black. Posteriorly the black increases in extent and reduces the buff area, which has become more rufous, to a barbed-arrow shape, while a grey tip appears at the extremity of the feather.

The lower back and rump are pinkish buff, finely mottled with black, with two wide longitudinal lines of black, separated by a narrow buff shaft-streak.

The scapulars are black with chestnut spots and mottling on the inner web, and a pale buff shaft-streak. The wing-coverts are mottled and the inner secondaries continue the pattern of the scapulars with the black gradually diminishing to an irregular, sub-terminal blotch on the outer web. The secondaries are dark brown with fairly regular chestnut cross-bars, dying out on the outer flight-feathers, which are unmarked except for a wide outer margin of pale buff.

The shorter tail-coverts are mottled sandy and black, with pale buff cross-bars. On the longer ones there is an increase of rufous, and an emphasizing of the pale bars, which on the central rectrices are proximally outlined in black. With the exception of this central pair, the tail-feathers are rich chestnut, except for the inner web and a broad zone near the tip. The terminal margin is pure white.

The breast, sides and flanks are in general like the mantle, with dark brown outlining the rufous or buffy central barbed-arrow, and a border and tip of grey. Posteriorly on the sides, the definiteness of the pattern is destroyed by mottling. The black is much reduced on the lower breast and belly, the colour of these parts being in some individuals almost solid pinkish buff, paling into whitish at the extremity of the feathers.

The under tail-coverts are rich chestnut with a broad tip of pure white, the two colours being separated by a more or less broken cross-bar of black.

The upper mandible is dark horn; the lower yellowish. The legs and feet are pale plumbeous or horny grey, dark brown in dried skins. Irides hazel. Weight 1 lb. 10 ozs. to 2 lbs.

Bill from nostril, 15 mm.; length, 525 to 560; expanse, 700 to 725; wing, 215; tail, 200; tarsus, 65; middle toe and claw, 58.

JUVENILE PLUMAGE.—The crown is dull brown with no crest apparent. Chin and throat white, the lower throat and neck with broad, dark-brown tips. Lores and face whitish, with a broad brown border; posteriorly on the ear-coverts the white is reduced to a terminal shaft-streak. Nape white, with three round dark spots down each web. On the hind neck the white becomes buff and the spots form transverse bands.

Mantle, scapulars, back and wing-coverts yellow or olive-brown, with a long, narrow, pale buff shaft-streak, and the inner webs mottled, or solid black, or with a terminal spot of this colour. In the feathers down the median line of the back the black is equal on each web and extensive, limiting the yellow brown to a narrow margin and to the basal portion.

The ventral surface, from breast to under tail-coverts, shows an almost uniform pattern of chestnut, with two large tapering lines of black down each web.

In a young male which is well on in the moult into the first year plumage the inner eight primaries are all new, No. 8 being only 25 mm. out of its sheath, while Nos. 9 and 10 have not yet completed their delayed growth.

The secondaries are all new, although the three or four innermost ones are still in active growth. No. 1 shows its very long delay by being only half-grown at this late period. This is unquestionably the last flight-feather to be shed.

The sixteen tail-feathers are all new and growing actively, but the appearance on the whole is of a double tail. This is due to the fact of the extreme precocial development of the upper tail-coverts, five pairs of which are actually longer than the true tail, reaching a length of 145 mm. as compared with the 125 mm. of the tail itself. In colour and pattern this pseudo tail exactly corresponds to the central pair of rectrices, and during this transitory period it must function with more effect than the growing tail-feathers.

Owing to the extreme gradation of the feathers and their simultaneous growth it is rather difficult to prove the *Phasianine* method of moult of the rectrices in succession, from the outer to the inner pairs, in such an individual as this. Careful measurements, however, and comparison with the full-grown tail-feathers of adults, shows a most beautiful gradation. At the moment when this young male was shot the rectrices had completed the following percentages of growth:

Inner pair	45 per cent.
2nd pair	60 per cent.
3rd pair	65 per cent.
4th pair	70 per cent.
5th pair	74 per cent.
6th pair	75 per cent.
7th pair	80 per cent.
Outer pair	83 per cent.

Other individuals showed that this was the uniform method of moult, by the presence of old central rectrices, but in this young bird the evanescent stage of active growth of all the tail-feathers gives an unusual opportunity to depict how delicately graduated and exact is the phenomenon.

First Year Plumage.—Except for the frequent hints of juvenile pigment which occasionally stain and tinge the new feathers in early moulting birds, there is little or no difference in the first-year plumage and that of succeeding years.

The statement that the greater width of the black shaft-stripes on the mantle feathers and their unusual abundance on other parts of the plumage is an indication of immaturity is an error. The extremes of variation in these respects may characterize both birds of the year and very old adults.

SYNONYMY

Satyra macrolopha Less., Dict. Sci. Nat., LIX. 1829, p. 196; id. Traité d'Orn. 1831, p. 493.

Phasianus pucrasse Gray, in Griff. ed. Cuv., III. 1829, p. 26 [Almorah Hills].

Phasianus pucrasia Gray, Ill. Ind. Zool., I. 1830–32, pl. 40; Gould, Cent. B. Himal. 1832, pls. 69, 70; Vigne, Proc. Zool. Soc. 1841, p. 6 [Alpine Punjab].

Euplocomus pucrasia Jard. Nat. Lib., Orn., IV. 1834, p. 216, pl. XXI.

Tragopan pucrasia Temm. Pl. Col., V. 1834, text to pl. 15 [No. 545].

Eulophus macrolophus Lesson, Comp. Buff., VII. 1836, p. 354.

Pucrasia macrolopha Gray, List of Birds, 1844, pt. III. Gall. p. 31 [part]; id. Gen. Birds, III. 1844, p. 503; Hutton, J. As. Soc. Beng., XVII. 1848, pt. II, p. 694; Gould, Birds Asia, VII. 1854, pl. 26; Adams, Proc. Zool Soc. 1858, p. 500 [Simla]; Irby, Ibis, 1861, p. 235 [Kumaon]; Jerdon, Birds India, III. 1863, 524; Gray, List Gallinae Brit. Mus. 1867, p. 30; Tytler, Ibis, 1868, p. 203 [Simla to Mussooree]; v. Pelzen, Ibis, 1868, p. 321 [Koteghur]; Beavan, Ibis, 1868, p. 380 [Simla]; Brooks, Ibis, 1869, p. 60 [Naini Tal, Almorah]; Gray, Hand-list Birds, II. 1870, p. 258; Elliot, Mon. Phas., I. 1872, pl. 28; Elliot, Ibis, 1878, pp. 125–126; Marshall, Ibis, 1879, p. 463; Marshall, Ibis, 1884, p. 422; Anderson, Jour. Bomb. Nat. His. Soc., IV. 1889, p. 59; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 311; Grant, Hand-book Game-birds, I. 1895, p. 281; Blanford, Fauna Brit. India, Birds, IV. 1898, p. 84; Oates, Game-birds of India, I. 1898, p. 313; Sharpe, Hand-list Birds, I. 1899, p. 36; Styan, Ibis, 1899, p. 298; Oates, Cat. Birds' Eggs Brit. Mus., I. 1901, p. 56; "Pine Marten," Jour. Bomb. Nat. His. Soc., XIX. 1910, p. 797; Finn, Game-birds India and Asia, 1911, p. 63; Mitchell, Proc. Zool. Soc. 1911, p. 521.

Phasianus macrolopha Blyth, Cat. Mus. As. Soc. 1849, p. 245 [part].

Pucrasia macrolopha macrolopha Beebe, Zoologica, I. No. 15, 1914, p. 278; Baker, Jour. Bomb. Nat. His. Soc. XXV. 1918, p. 524.

KASHMIR KOKLASS PHEASANT

Pucrasia macrolopha biddulphi Marshall

NAMES.—Specific: *biddulphi*, after the discoverer of the form, Major John Biddulph. English: Kashmir or Biddulph's Koklass. Native: Plas (Kashmir).

BRIEF DESCRIPTION.—Male: Similar to the Common Koklass (*P. macrolopha macrolopha*), but with the chestnut of the fore neck continued more or less completely over the hind neck, forming a nearly or quite complete collar. The chestnut of the lower plumage is usually darker, and mixed with black. Female: Similar to the female of the Common Koklass.

RANGE.—Kashmir.

GENERAL DISTRIBUTION

THIS form has been found in suitable localities quite widely distributed in Kashmir, as far in the north-west as Gilgit. Specimens from that locality approach *castanea*, while toward the east it grades evenly into *macrolopha*.

GENERAL ACCOUNT

This form would seem hardly deserving of even subspecific distinction, were it not that there does seem to be a node of static radiation in Kashmir, where one finds many individuals of fairly close resemblance. There is, however, a complete gradation from *macrolopha* on the east, to *castanea* on the west. The distinguishing characters are found only in the males, and in the extreme phase of development they show the chestnut of the ventral surface decidedly darker, more maroon, while there is a distinct black margin to all these feathers, and the black encroaches from the base, and thus limits the maroon. In some individuals, indeed, the maroon on the lower breast becomes reduced to a very inconspicuous terminal shaft-streak. In these birds the chestnut on the tail is replaced by rufous buff.

In addition, this maroon colour (still holding its darkened hue) extends clear around the back of the neck in the form of a narrow, but irregularly pointed (owing to the lanceolate shape of the feathers) collar of dark red.

No other constant characters are apparent, and the females are identical.

These individuals are variable to the highest degree. In some, almost the entire lower surface is maroon and black, the grey feathers being confined to a narrow strip along the sides. In such birds the maroon on the dorsal surface occurs irregularly over the entire mantle. This forms a direct link with *P. castanea.*

This western line of *biddulphi* leading from *macrolopha*, while it shows an increase and darkening of the chestnut, yet has the dorsal surface, including the lower mantle, back, rump, scapulars and wing-coverts, as light as in *macrolopha.* In fact, these parts are identical in the two forms, except that the concealed rufous on the secondaries and

KASHMIR KOKLASS PHEASANT—*Pucrasia macrolopha biddulphi* Marshall

(Upper left-hand figure)

WESTERN KOKLASS PHEASANT—*Pucrasia macrolopha castanea* Gould

(Lower figure)

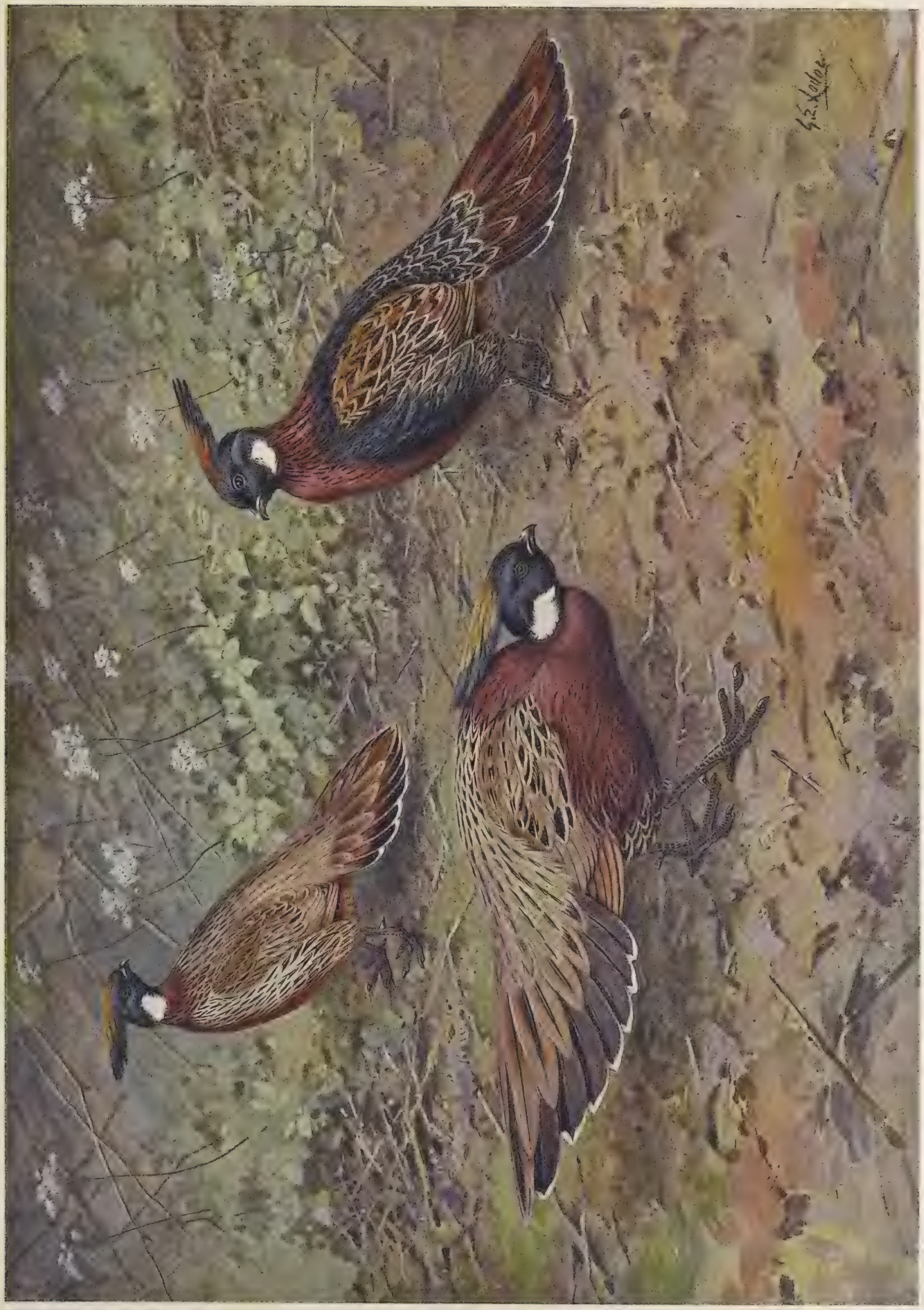
NEPAL KOKLASS PHEASANT—*Pucrasia macrolopha nipalensis* Gould

(Right-hand figure)

The sides and flanks are grey in the Kashmir bird, chestnut in the Western Koklass, and nearly black in the Nepal form.

Their habits are similar, and in all parts of their mountainous range we find conifers overhead, and, as in the painting, beds of tall saxifrage pushing up through the fallen needles and cones, their filmy heads nodding in the dim forest light.

PLATE XLVI.



KASHMIR KOKLASS PHEASANT. WESTERN KOKLASS PHEASANT. NEPAL KOKLASS PHEASANT.

tail tends to become diminished and obliterated in *biddulphi*. In many ways the majority of specimens of *biddulphi* are more akin to *castanea* than to *macrolopha*, as we may see from the following comparison.

P. biddulphi presents the following characters:

macrolopha-like.	*castanea*-like.
Pale-shafted scapulars.	Chestnut on mantle.
Grey ventral plumage.	Secondaries with reduced chestnut.
	Rectrices with reduced chestnut.
	Darkening of chestnut.

Since Captain Marshall described this form thirty-five years ago, little has been recorded of its habits. Baker records that, like the Common Koklass, the Kashmir bird nests in forests of pine and fir, and lays its eggs in a collection of leaves and rubbish under a thick bush or near a tree. The eggs are usually five or six in number. A set of six averaged 49·8 by 36·2 mm. These birds keep close to the same ground, and find their food in the same forest glades day after day.

SYNONYMY

Pucrasia macrolopha Adams (nec Lesson), Proc. Zool. Soc. 1859, p. 186; Davidson, Ibis, 1898, p. 39; Ward, Jour. Bomb. Nat. Hist. Soc., XVII. 1907, p. 944.

Pucrasia biddulphi Marshall, Ibis, 1879, pp. 461, 463; Marshall, Jour. für. Orn. 1879, p. 424; Marshall, Stray Feathers, VIII. 1879, p. 445; Hume, Stray Feathers, VIII. 1879, p. 449; Grant. Cat. Game-birds Brit. Mus. XXII. 1893, p. 313; Grant, Hand-book Game-birds, I. 1895, p. 284; Blanford, Fauna Brit. India, Birds, IV. 1898, p. 86; Sharpe, Hand-list Birds, I. 1899, p. 36.

Pucrasia macrolopha biddulphi Beebe, Zoologica, I. No. 15, 1914, p. 278; Baker, Jour. Bomb. Nat. Hist. Soc. XXV. 1918, p. 535.

WESTERN KOKLASS PHEASANT

Pucrasia macrolopha castanea Gould

NAMES.—Specific: *castanea*, from the excess and richness of the chestnut colour in the plumage. English: Kafiristan or Chestnut Koklass; Western Koklass.

BRIEF DESCRIPTION.—Male: Similar to *macrolopha*, but with the deep chestnut extending over the whole ventral plumage, and covering the entire hind neck and the mantle; back, with slightly increased black pigment, and tail-feathers with chestnut almost obsolete. Female: Unknown; probably similar to *macrolopha*, but with increased melanism.

RANGE.—Kafiristan.

GENERAL DISTRIBUTION

THE few known specimens of this form of Koklass Pheasant have been collected in Chitral and Kafiristan. The locality of "Northern Afghanistan," meaning apparently the region still further to the west of Kafiristan, is based upon the mere mention of the fact by Captain Marshall. As he also states that *nipalensis* is found in "Bhotan," there seems no reason on that score to give credence to the fact. Koklass, however, are not uncommon in Chitral, close to the Afghan border, so it is not impossible that the birds will be found in the latter country.

GENERAL ACCOUNT

In Lower Chitral the Western Koklass is common on the heavily forested slopes of the mountains, such as Pattison, Asseth, and the valley beyond Drosh Fort. These slopes are covered with splendid deodars, and the pheasants spend most of their time in the shade of these conifers. They occasionally, however, wander out upon the treeless areas for food, especially early in the morning, and the crowing of the cocks is often heard from some tree near the open zone. The bare slopes are clothed only with low-growing herbage, with here and there a patch of willow and birch, stunted and gnarly on the more lofty elevations.

In winter the birds are driven downward into the more sheltered valleys by the severe weather, but in summer they are seldom found below an elevation of seven or eight thousand feet. Although it is a rather difficult matter to secure or even to approach these birds owing to the dense character of the undergrowth which they inhabit, yet their presence in any locality is at once revealed by their loud, harsh crow. At a distance this *kok! kok! kokrass!* is not unlike the short, broken crow of the red junglefowl, and this resemblance has led to many mistakes. The latter bird, however, is never found at such high elevations as the Koklass. When the pheasant is heard near at hand, the calls of the two birds can never be confused.

The two dismounted, but very much over-stuffed adult male types from which Gould described this form are now in the British Museum of Natural History, and appear to be the only specimens in any museum. They were sent to the East India Company by Dr. William Griffith. I was able to obtain a single moth-eaten skin from a civilian in India, who had two more poorly mounted specimens, males, all of which had been collected in eastern Kafiristan. They approached close enough to this subspecies to fall within its definition rather than to be classed as *biddulphi.*

As I have already stated, Gould is in error when he writes that *castanea* is larger than the average of *macrolopha.* The measurements are approximately the same, with a slightly larger average in favour of *macrolopha*, due doubtless to the larger series available.

Gould's two types vary inter se, almost as much as the form itself departs from typical *biddulphi.*

The head, back and wing-coverts are similar to the general average of *macrolopha macrolopha*, except that the back feathers have wider black centres than most of the darker individuals of the Common Koklass. The rump has very indistinctly marked black centres, and the secondaries are less rufous, more sandy in tone, although none of these characters is the same in the several individuals of *castanea.* The tail-feathers have much of the chestnut replaced by an extension of the dark brown, except near the base of the feathers.

In the most extreme of Gould's types the entire upper neck, the mantle and the whole of the ventral surface are uniform dark chestnut, with the exception of the lower sides and flanks, which are more typically *macrolopha*-like. The bases of all these chestnut feathers are dark brown, and on the lower breast and belly this brown colour becomes dominant, the chestnut being restricted to the tips of the feathers. The under tail-coverts are radically unlike in Gould's two types. In one, and in my specimen, they are almost uniform chestnut; in the other type, half of the visible portion of the feathers is white.

Gould's plate (" Birds of Asia," VII. 1854, pl. 54) represents the most extreme of his types very well. Elliot (" Monograph of the Phasianidae," I. 1879, pl. 29) makes *castanea* a synonym of Temminck's *duvauceli.* This in turn Grant places under *nipalensis.* A glance at the plate, however, shows that it is *biddulphi*, the restricted chestnut of the ventral plumage setting it apart from *castanea*, and the light *macrolopha*-like upper surface showing that it has nothing to do with the dark-backed eastward offshoot of *macrolopha.* Elliot's description of the posterior upper parts, " black, the feathers edged with white," does not at all correspond with the plate.

SYNONYMY

Pucrasia castanea Gould, Proc. Zool. Soc. 1854, p. 99; Gould, Birds of Asia, VII. 1854, pl. 27; Sclater, List of Phasianidae, 1863, p. 4; Blyth, Ibis, 1865, p. 28; Blyth, Ibis, 1867, p. 152; Hume, Stray Feathers, V. 1877, p. 138; Elliot, Ibis, 1878, p. 125; Hume, Game-birds India, I. 1879, pp. 165, 166; Grant, Cat. Game-birds Brit. Mus. XXII. 1893, p. 314; Grant, Hand-book Game-birds, I. 1895, p. 285; Blanford, Fauna Brit. India, Birds, IV. 1898, p. 86; Sharpe, Hand-list Birds, I. 1899, p. 36; Finn, Game-birds India and Asia, 1911, p. 65.

Pucrasia duvauceli Blyth, Ibis, 1867, p. 152; Gray, Hand-list Birds, II. 1870, p. 259; Marshall, Ibis, 1879, p. 463.

Pucrasia macrolopha (var. *castanea*) Fulton, Jour. Bombay Nat. Hist. Soc., XVI. 1904, p. 81.

Pucrasia macrolopha Perreau, Jour. Bombay Nat. Hist. Soc., XIX. 1910, p. 919.

Pucrasia macrolopha castanea Beebe, Zoologica, I. No. 15, 1914, p. 278; Baker, Jour. Bombay Nat. Hist. Soc., XXV. 1918, p. 539.

NEPAL KOKLASS PHEASANT

Pucrasia macrolopha nipalensis Gould

NAMES.—Specific: *nipalensis*, from Nepal, the range of the bird. English: Nepal Koklass or Pucras Pheasant. Native: Pokrass (Nepal).

BRIEF DESCRIPTION.—Male: Similar to the Common Koklass (*P. macrolopha macrolopha*), but with the feathers of the back, rump, sides and flanks black, more or less edged with grey. The wing-coverts black, edged with buff or rufous. The sides and hind neck and upper mantle black, strongly marked with chestnut. Female: Similar to the Common Koklass, but showing a decided erythrism throughout the plumage; the whites of *macrolopha* being buffs, and the buffy areas turning to warm rufous.

RANGE.—Western Nepal.

GENERAL DISTRIBUTION

THE Nepal Koklass Pheasant is the eastern offshoot of the Common Koklass. The most extreme individuals of this form are those which have been obtained farthest to the east, although this is only in central Nepal, west of Khachi. It is certain that it does not occur east of the streams which rise near the peak of Dhaulagiri and flow south-eastward into the Gunduck.

From here westward we find the Koklass Pheasants partaking more and more of the character of true *macrolopha*. Many specimens collected between Jemlah and the eastern border of Kumaon are indistinguishable from dark-mantled *macrolopha* from eastern Garhwal. (This region bridges the hiatus of valleys which separates *Tragopan melanocephalus* from *satyra*.)

GENERAL ACCOUNT

A large series of forty or fifty Nepal Koklass which I have examined form a most remarkable assemblage. Taking the extreme form, we find that the Nepal birds differ from the typical *macrolopha* in that the dorsal plumage, instead of remaining grey, darkens until black is the dominant colour. To see an extreme individual with the lateral ventral plumage black instead of pale ashy grey, the mantle chiefly chestnut and the remainder of the upper parts predominantly black instead of ashy, is to conclude at once that the birds are clearly marked species. But the links connecting the extremes are so gradual that there is absolutely no place to draw a line; there is no sudden break in either colour or pattern. There is a slight but gradual decrease in general size from *macrolopha* to extreme *nipalensis*.

As to the presence or absence of chestnut on the mantle, it is decidedly not due to age. I have examined young males which have just completed their first autumn moult and found the colour absent in some and very much developed in others. Its greater or less development, however, is correlated with the corresponding geographical separation from *macrolopha*, and one series of six specimens from central Nepal shows the chestnut mantle at its greatest development. In addition to this fact, most of the birds collected at Jemlah and the vicinity in western Nepal are without the chestnut on the mantle, or, if present, it occurs only in irregular spots not more than is found sporadically in individual *macrolopha* from Garhwal. So the evidence shows that the chestnut-mantled birds are the farthest removed geographically, as well as in colour and pattern, from the central form.

This entirely does away with the theory that because of the chestnut mantle, *castanea* and *nipalensis* are contiguous geographically and are more closely related than to the intervening *macrolopha*. The great increase of the ventral chestnut in *castanea* is another character absolutely separating these two forms, except through their common ancestor, *macrolopha*.

In order to define this subspecies with any clearness or definiteness, we must wholly ignore the many intermediate individuals, each varying widely, which have been collected in the western part of Nepal in the vicinity of Jemlah. The series which I have examined from considerably farther east shows a more uniform and altogether extreme type of colouring, which we must substitute for that of Gould and others.

The description which Grant gives may be applied to Jemlah Koklass on the whole, as a first step eastward from *macrolopha* on the way toward *nipalensis*. Gould's original description takes us another step, but it is far from the extreme type, which, if anything at all, must stand for *nipalensis*. As we shall see, there are no characters which mark the latter which are not found in all conditions of gradation, leading to the very palest of *macrolopha* birds. We thus find male *nipalensis* characterized by intense generalized melanism, with increased erythrism only on the upper surface.

DETAILED DESCRIPTION

ADULT MALE.—Head and neck as in *macrolopha*, except that the crown and the shorter part of the crest are warm rufous buff. The hind neck and mantle are dark chestnut, the black being confined to the tip and two narrow lateral lines down the centre of the webs. On the upper back the chestnut dies out as a narrow shaft-streak. The back is black with scarcely a trace of white edging, but on the lower back a light margin persists, and on the rump and upper tail-coverts this increases in width and becomes tinged with buff. The chestnut of the mantle is continued directly on to the scapulars, tertiaries and inner secondaries; on the former as a bright shaft-stripe and on the inner web, increasing and paling posteriorly, until, on the inner secondaries, it covers most of the feather, as a clouded, but still rich rufous. It decreases to a shaft-stripe on the succeeding secondaries, and on the primaries covers the narrow outer webs with a warm rufous buff. The lesser wing-coverts are jet black, the greater dark brown, uniform for the most part, but here and there with an evanescent narrow fringe, white on the lesser, rufous on the greater coverts.

The tail is entirely free from grey or sandy colour, and only the shorter upper tail-coverts show even the buffy-white fringe of the rump. The longer ones are similar to the central rectrices, chestnut with a central line of black. The chestnut persists strongly even on the outer feathers, while the narrow white fringe is strongest on the outer ones and dies out before it reaches the central feathers.

On the under parts the dark chestnut is developed only to about the same extent in *macrolopha*, except, of course, on the side neck, where it joins that of the mantle. But I have seen individuals of otherwise typical *macrolopha* which had more ventral chestnut than any Nepal bird. The sides of the breast and belly show no trace of ashy, but are dull jet black, with, as on the wing-coverts, adventitious hints of whitish fringe. This is wider and more distinct on the flanks. The under tail-coverts are rich light chestnut.

The Nepal Koklass shows a slight but steady decrease in size from *macrolopha* eastward. The average measurements of a few extremely melanistic birds from central Nepal are as follows: bill from nostril, 13 mm.; wing, 220; tail, 220; tarsus, 64; middle toe and claw, 58.

Adult Female.—Within more narrow limits the female Nepal Koklass shows as much variation as do the males. The extreme, reached through a gradual transition, shows a decided erythrism, both on the dorsal and ventral surfaces. The white colours of *macrolopha* become buffs and the buffy tones of the most western species change to warm rufous in *nipalensis*. Bill from nostril, 12 mm.; wing, 200; tail, 185; tarsus, 60; middle toe and claw, 54.

SYNONYMY

Tragopan pucrasia Temminck (nec Gray), Pl. Col. V. 1834, pl. 15 [nec text] [no. 545]; Hume, Stray Feathers, V. 1877, p. 138; id. Stray Feathers, VII. 1878, p. 124.

Gallophasis pucrasia Hodgson, Icon. ined. in Brit. Mus. Gall. pl. 20, nos. 68, 71; id. J. As. Soc. Beng., XII. 1843, pt. 1, p. 313; id. in Gray's Zool. Misc., 1844, p. 85.

Pucrasia macrolopha Gray, List of Birds, pt. III. Gall. 1844, p. 31 [part]; id. Cat. Hodgs. ed., I. 1846, p. 126; Sclater, List Phas., 1863, p. 3 [part, Nepal]; Blyth, Ibis, 1867, p. 152 [part].

Phasianus macrolopha Blyth, Cat. Mus. As. Soc., 1849, p. 245 [part].

Pucrasia nipalensis Gould, Proc. Zool. Soc. 1854, p. 100 [Nepal, Bhotan]; id. B. Asia, VII. 1854, pl. 28; Sclater, List Phas. 1863, p. 4 [Bhotan]; Gray, List Gallinae Brit. Mus., 1867, p. 30; id. Hand-list Birds, II. 1870, p. 258; Hume, Stray Feathers, VII. 1878, p. 428; Hume and Marshall, Game-Birds Ind., I. 1878, p. 166, pl.; Marshall, Ibis, 1879, p. 463 [Bhotan]; Scully, Stray Feathers, VIII. 1879, p. 343 [W. Nepal]; Hume, Stray Feathers, VIII. 1879, p. 449 [not in Bhotan]; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 314; Grant, Hand-book Game-birds, I. 1895, p. 284; Sharpe, Hand-list Game-birds, I. 1899, p. 36.

Pucrasia duvauceli Bonap. C. R., XLII. 1856, p. 879; Gray, Cat. Hodgs. ed. 2, 1863, p. 68; Elliot, Mon. Phas., I. 1872, pl. 29; id. Ibis, 1878, p. 125.

Pucrasia macrolopha nipalensis Beebe, Zoologica, I. No. 15, 1914, p. 278; Baker, Jour. Bombay Nat. His. Soc., XXV. 1918, p. 537.

THE YELLOW-NECKED KOKLASS PHEASANT AND ITS ALLIES

As we have seen, the Koklass Pheasants of the extreme western Himalayas and of central Nepal develop chestnut mantles. Those of Tibet and of northern China acquire a less extensive but more conspicuous and very distinct yellow dorsal collar. This is foreshadowed in about 20 per cent. of *macrolopha macrolopha*, the Common Koklass of Garhwal, in which a strong buffy tinge is present on the side and hind neck.

The character which seems most constant, and therefore logical for use in separating the northern forms, is the pattern of the mantle and other parts of the plumage. The central black stripe of *macrolopha* and its allies is in *xanthospila* split into two by a wide shaft-stripe.

The rufous on the lateral rectrices so marked in *macrolopha* disappears in typical *xanthospila*, save in about 10 per cent. of the individuals; but this character is retained in *xanthospila meyeri*. The orange tinge of the collar is characteristic of Kansu specimens which seem to form a fairly well-marked subspecies *ruficollis*.

The form *joretiana* occurs to the south of typical *xanthospila*, and in some ways, noticeably the loss of the yellow collar, approaches *darwini*. The perfect *xanthospila* "double" pattern on the plumage, however, together with the great variation in the amount of nuchal yellow in the northern birds (I have seen one from Pekin with no more buffy tinge than is found in many *macrolopha* from Garhwal), make it desirable to consider *joretiana* as a subspecies of *xanthospila*.

YELLOW-NECKED KOKLASS PHEASANT

Pucrasia xanthospila xanthospila Gray

NAMES.—Specific: *xanthospila*, Gk. ξανθός, yellow, σηῖλος, spot, yellow-spotted. English: Yellow-necked or Northern China Koklass; Yellow-spotted Pucras. French: Pucrasia à cache jaune. Native: Song-ky (Pine-fowl, Chinese).

BRIEF DESCRIPTION.—Male: Head, neck and ventral chestnut much as in *macrolopha;* a conspicuous collar of yellow; the general plumage pattern of *macrolopha* of a single, central black stripe is changed in *xanthospila*, the stripe being divided into two by a grey shaft-stripe; outer tail-feathers pearl grey crossed with a black bar; a subterminal band of black and a white tip. Female: resembles the female of *macrolopha*, except for outer tail-feathers, which are like those of the male.

RANGE.—From central Szechuan north-east to Pekin.

GENERAL DISTRIBUTION

ALTHOUGH the range of this species is given as north-western China, extending into Manchuria and eastern Tibet, I can find no definite records for the extremes here included. I found the bird within one hundred and fifty miles of Pekin, and specimens have been recorded from Kansu and as far west as Tatsienlu in Szechuan (lat. N. 30° — long. W. 102°). So until we learn more of the vast region included between these two localities, over a thousand miles apart, it would be idle to do more than connect them with an indefinite line, extending along the general mountain ranges.

GENERAL ACCOUNT

Père David's few observations on the Yellow-necked Koklass still comprise almost a summary of our knowledge of this species. He says, vaguely enough, that the birds keep chiefly to the forests and undergrowth, and in these places they occur singly or in pairs. Their food consists of grain and the seeds of conifers, and their flesh is delicious eating, with sometimes an aromatic odour, being superior to that of the other pheasants of this region.

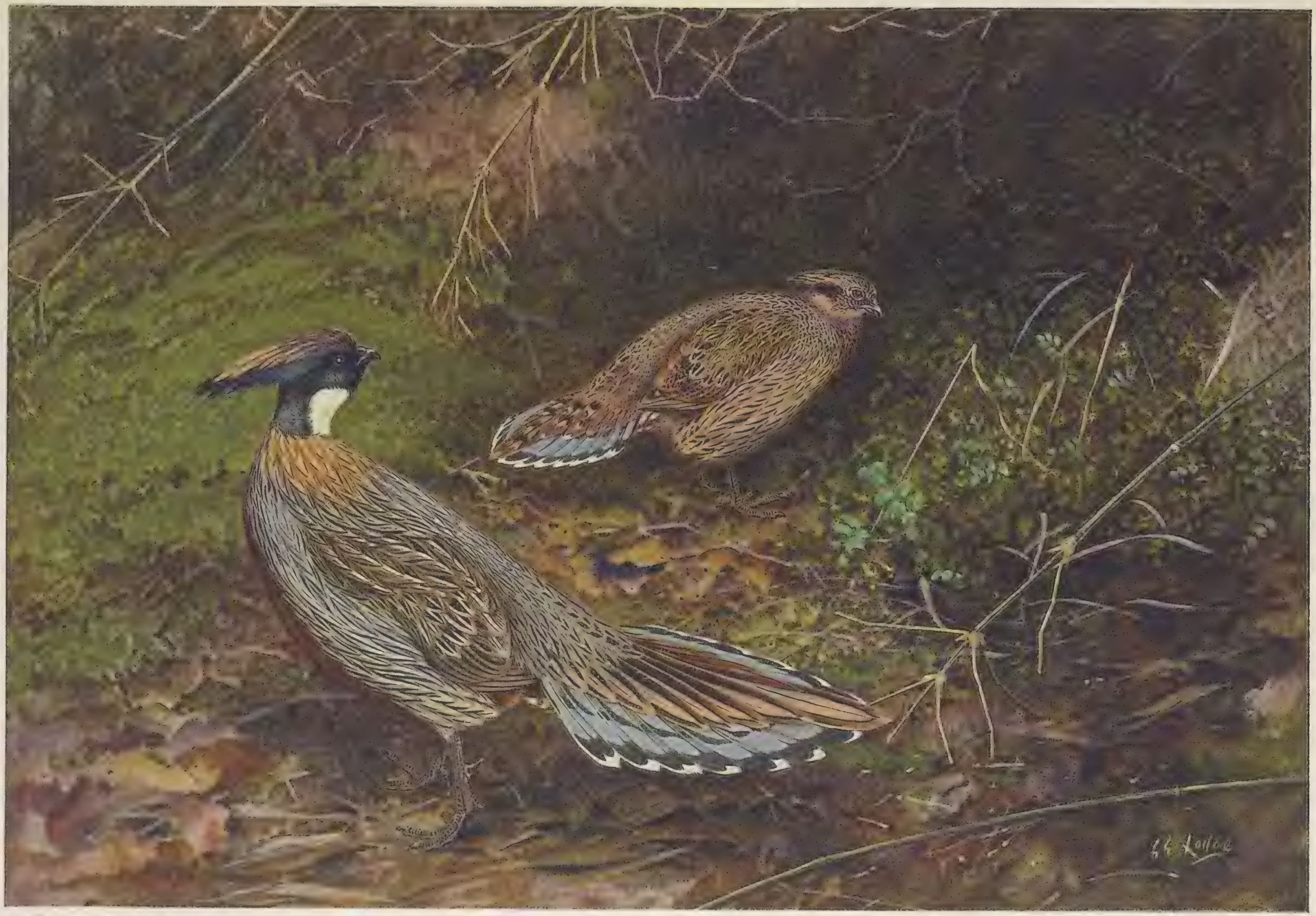
Several authors mention this Koklass as being brought to the markets of Pekin regularly, but in fewer numbers than the true pheasants (*Phasianus*). Saurin says they are often brought alive and never frozen, and the fact that the men who have these in their possession are Chinese, and not Mongols, would seem to indicate that the birds are not found beyond the mountains which enclose China proper on the north.

Late in the winter when I visited Pekin the most thorough search in the markets brought to light only two bedraggled cock Koklass, whose crops were empty and whose bodies were so far gone in dissolution that it was impossible to test the assertion as to the deliciousness of their flesh. As the plague had been raging a few weeks before, there were almost no pheasants of any kind to be had.

YELLOW-NECKED KOKLASS PHEASANT

Pucrasia xanthospila xanthospila Gray

On a bitterly cold, rainy day, near the Great Wall of China I heard the crow of one of these pheasants, and although I had no dog I stalked the bird. Through the mist the stunted vegetation showed dull brownish, dripping, saturated, while the rocks had no healthy covering of moss and lichens, but a dark, shining slime which made walking very difficult. Across a small open space I saw the Koklass run swiftly, the white neck patch and tail-tips flashing conspicuously as it went.



YELLOW-NECKED KOKLASS PHEASANT.

One author speaks of being certain that these birds are found in the Tung-lin or eastern woods, some one hundred miles north of Pekin, near the tombs of the recent emperors. Here in the foothills of the mountains these pheasants are said to be abundant.

I spent some time in this region, exploring both outside and inside the Great Wall, but only once caught a glimpse of a Koklass pheasant. This was when I was returning from a long day's tramp, thoroughly tired out from walking rock-strewn stubble. I had halted at a rivulet to drink, and was sitting on a stone, when a Koklass called some distance away. I had been hearing the broken cackle of true pheasants throughout the day, and had not heard the very distinct *croaak! croaak!* since I left Garhwal a year before. The day was cold and very cloudy, and rain had fallen at intervals, and the whole rolling plain was most desolate, stretching out endlessly in one direction and ascending steeply into the foothills of the mountains to the north. I crept as silently as possible in the direction of the sound, but as I had no dog I had little hopes even of seeing the bird. Through the mist the stunted, dry vegetation showed dull brownish, dripping, saturated, while the rocks had no healthy covering of moss and lichens, but a dark, shining slime which made walking most difficult. Ahead of me, the rocky character of the ground became dominant and the coarse grass consequently thinned out. Across this space I saw the bird as it ran swiftly from the cover of one clump of dried grass to another. The white neck-patch showed conspicuously and the white tail-tips flashed for an instant as one-half of the tail was spread in helping the bird to turn sharply. Although I tramped for another half-hour, until dusk settled down, I could not catch another sight of the pheasant.

The two birds which I secured in Pekin and a hen which a Chinaman brought to me a few days after this, had all three been trapped, apparently snared by one leg. The birds are certainly not common in most of the province of Chili, and probably their nearest occurrence in numbers is only to the westward of Shansi.

CAPTIVITY

The Yellow-necked has always been about as rare in captivity as the Common Koklass. Several specimens of both sexes have reached England alive, and the record for one showed that it lived in the London Zoological Gardens for four months.

Aviculturists in France have had better success, as may be judged from the following abstracts of several instances of successful breeding of Yellow-necked Koklass. It is a great pity that no detailed notes as to eggs or chicks were kept.

"M. Vekemans ["Bull. Soc. d'Acclim." 1872, p. 384], directeur du Jardin Zoologique d'Anvers, écrit qu'il a obtenu cette année pour la première fois la reproduction du *Pucrasia xanthospila*. Cette belle espèce de Faisan chinois, rarement importée jusqu'ici, n'avait pu être encore multipliée en Europe."

"Je possède ["Bull. Soc. d'Acclim." 1878, p. 663] depuis 1876 un couple de *Pucrasia xanthospila:* c'est une espèce très-robuste. Le preuve en est que sur 7 sujets qui m'ont été envoyées du Thibet à trois reprises différentes, tous sont arrivés en bon état, tandis que la plupart des Tragopans, Crossoptilons, Ithagines succombaient pendant le voyage.

"Mon unique femelle a donné 7 oeufs, dont 5 fécondés. Je n'ai pu élever que 2 sujets, un coq et une poule; ce n'est qu'un succès relatif, mais un succès que je m'efforcerai de poursuivre, car ces oiseaux sont venus très vite. Ils ne font qu'une consommation insignifiante de pâtée et d'oeufs de fourmi quand ils sont dans un parquet avec de l'herbe à discretion. Le coq a déjà revêtu son plumage d'adulte. Je pense donc que cette espèce est susceptible de reproduire la première année, et si elle s'annonçait comme un peu plus féconde, elle aurait des titres sérieux à être essayée comme oiseau de chasse. Elle ne craint en effet ni la neige, ni la température si rigoureuse en hiver dans nos contrées."

The only remaining definite account of the breeding of birds of this species is as follows ("Bull. Soc. d'Acclim." 1881, p. 583): "In the month of March 1880 we received five imported birds, two of which did not thrive after their arrival, and by the spring of 1881 there remained but one male and two females. In April one female was killed . . . On April 23rd the only surviving female laid her first egg in a corner of the cage, and she continued to lay, at intervals of three days, until July 1st. She laid twenty-four fertile eggs, from which nineteen young were hatched, which still survive, while two chicks died in the shell, another was crushed by the brooding hen, and a fourth, already well grown, was killed by a neighbouring brooding hen into whose enclosure the chick had strayed.

"To sum up, the breeding of young Koklass pheasants does not present more serious difficulties than the breeding of other species, their diet being the same. They are characterized by their wildness, as, while young tragopans and impeyans will eat from the hand, the Koklass chicks hide themselves as soon as the door of their enclosure is opened."

DETAILED DESCRIPTION

ADULT MALE.—The entire crown greyish buff, the elongated crest clear rufous buff, and the still longer occipital crest just behind dull black with shining green edges. A very large patch of white extending from the gape and the ear-coverts down the side neck. The remaining portions of the head and neck shining iridescent green, the chin and throat, however, chiefly dull black. Dorsal part of the neck and upper mantle light yellowish buff with darker, more rufous margins. A narrow line of feathers along the mid line of the neck shows basal black, which creeps up the webs close to the edge, and where the yellow colour dies out on the mid mantle, the black has reached the tip in the shape of two broad tapering lines. This is the typical character of *xanthospila* on both dorsal and ventral plumage.

As the yellow dies out, a mottled grey takes its place and extends uniformly backward to the rump, where it becomes tinged with buff and rufous. The same grey and black pattern and colour characterize the entire under surface except for the mid zone of solid chestnut, which is the same as in *macrolopha*. The lower sides and flanks, however, show the nuchal yellow strongly developed.

The scapulars and wings are marked by an olive tinge, with the two black lateral lines well developed on all the coverts. On the tertiaries and inner secondaries this black is confined to two large, irregular subterminal spots, the inner of which is marked or replaced with rufous. The secondaries show successively less and less olive-brown mottling on the outer web, until the outer secondaries and primaries are plain dark brown except for a clean-cut margin of pale buff.

The longer three or four pairs of upper tail-coverts and the central pair of rectrices show a new type of pattern. The large centre is clear, pale, greyish white. This is bordered by the two black lines, which are almost obscured, their greater area being taken up by dull chestnut, which pales into light olive at the tip.

All the remaining tail-feathers show broad white tips, succeeded by a broad area of black. Most of the remaining portion of the feathers is pale grey, crossed half-way by an irregular black bar, the grey above this being also bordered with black. The feathers are opaque, the pale grey appearing below as dull brown, barely distinct from the black.

In several specimens from Szechuan, the tail-feathers vary strongly in the direction of *meyeri*, and hence toward *macrolopha*.

The under tail-coverts are richly tricoloured, bright chestnut basally, succeeded by a black bar and a large round terminal spot of white. Iris brown; bill black; legs and feet blue grey.

Bill from nostril, 16 mm.; wing, 223; tail, 190; tarsus, 66; middle toe and claw, 56.

Adult Female.—The new type of plumage pattern characterizing *xanthospila* is confined to the male, the female being remarkably like the corresponding sex of *macrolopha*. With the exception of the few characters noted, they are identical.

The head and neck present no distinct characters. The upper parts show a less development of black, and a corresponding emphasis of pinkish buff, especially on the upper neck and mantle.

The greatest dorsal mark of distinction is in the greater uniformity of colouring of the back and rump. Instead of carrying out the mantle pattern, there is a rather abrupt change on the back. The black markings and the shaft-stripe vanish, leaving the plumage of an indefinite, finely mottled buffy grey and dark brown. On the rump a curious single line of black feathers extends down the mid line.

The wings offer no important marks of distinction from *macrolopha*, but the tail-feathers, all but the central pair, are very different. They are identical with those of the male, being chiefly grey, crossed by an oblique black bar, with a large subterminal zone of black and a wide white fringe. Most individuals have more or less distinct traces of chestnut, chiefly in the form of irregular marginal spots down the outer webs.

The ventral surface is identical in the two species, except that in *xanthospila* the extremities of the feathers are distinctly whiter.

Bill from nostril, 15; wing, 208; tail, 152; tarsus, 58; middle toe and claw, 54.

Remarks.—The coloured plate in Gould's "Birds of Asia" does not represent a typical *xanthospila* as regards the yellow collar. In fact, I have seen Common Koklass from Garhwal with as strong a yellow-buff tinge as this plate shows. The divided black line on the plumage, however, marks the bird as distinct from the Himalayan species. Elliot's figure is better as regards the yellow collar and the general bluish cast of the plumage. The crest in both plates is wrongly drawn.

EARLY HISTORY

Two specimens, male and female, of the Yellow-necked Koklass were sent to the British Museum by Sir F. W. A. Bruce in 1864. These were described by G. R. Gray, and figured in the Proceedings of the Zoological Society of the same year. Both types are still in the South Kensington Museum.

Two years before, this species was mentioned by Dr. Lamprey in the same publication (Proc. Zool. Soc. 1862, p. 221), where he speaks of Koklass as "another kind of pheasant found in the Tien Tsin market," frozen and offered for sale. The imperfect condition of the plumage led him to confuse it with *macrolopha.*

Père David says elsewhere (Proc. Zool. Soc. 1868, p. 210), "C'est moi qui ai en et signalé (en 1862) le prémier une nouvelle espèce du Pucrasia que Mons. Gray a nommée *P. xanthospila.* Elle a été introduite en France par notre ministre M. Berthemy en 1864."

SYNONYMY

Euplocamus pucrasia Lamprey (nec Gray), Proc. Zool. Soc. 1862, p. 221.

Pucrasia xanthospila Gray, Proc. Zool. Soc. 1864, p. 259, pl. XX; Milne-Edw. N. Arch. Mus. Bull., I. 1865, p. 14, pl. I; figs. 3 & 4 [N.E. of Pekin]; Saurin, Proc. Zool. Soc. 1866, p. 437 [Mts. of N. and W. China]; David, N. Arch. Mus. Bull., III. 1867, p. 37 [Ta-Tchio-Chuan, Jéhol, Oulachan]; Gray, List Gallinae Brit. Mus. 1867, p. 31; David, Proc. Zool. Soc. 1868, p. 210; Gould, Birds Asia, VII. 1869, pl. 24; Gray, Hand-list Birds, II. 1870, p. 259; Swinhoe, Proc. Zool. Soc. 1871, p. 399 [N.W. China]; David, N. Arch. Mus. Bull., VII. 1871, p. 11 [Pekin, Mongolia, Sze-chuen]; Swinhoe, Proc. Zool. Soc. 1872, p. 552 [Manchuria to Sze-chuen]; Elliot, Mon. Phas., I. 1872, pl. 30; Vekemans, Bull. Soc. d'Acclim. 1872, p. 384; Sclater, Ibis, 1874, p. 169; David and Oustalet, Ois Chine, 1877, p. 497, pl. 104 [Manchuria to E. Thibet]; Andelle, Bull. Soc. d'Acclim. 1878, p. 663; Marshall, Ibis, 1879, p. 463; Libsig, Bull. Soc. d'Acclim. 1881, p. 583; Seebohm, Ibis, 1891, p. 380 [W. Cze-chuen]; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 315; Grant, Hand-book Game-birds, I. 1895, p. 285; Sharpe, Hand-list Birds, I. 1899, p. 36; Walton, Ibis, 1903, p. 32; Dresser, Manual Palae. Birds, pt. II. 1903, p. 670; Mitchell, Proc. Zool. Soc. 1911, p. 521; Salvadori, Boll. Mus. Zool. ed. Anat. Torino, XXVII. 1912, No. 647; Courtis, Ibis, 1913, p. 15.

Pucrasia davidiana Milne-Edw., N. Arch. Mus. Bull., I. 1865, p. 14.

Pucrasia meyeri Oustalet, Ann. Sci. Nat. (7), XII. 1892, p. 316 [Tà-tsién-loù].

Pucrasia xanthospila xanthospila Beebe, Zoologica, I. No. 15, 1914, 278; Baker, Jour. Bombay Nat. His. Soc. XXV. 1918, p. 541.

ORANGE-COLLARED KOKLASS PHEASANT

Pucrasia xanthospila ruficollis David and Oustalet

THE Koklass Pheasant of Kansu and western Shensi seem to differ from those to the east and south in having collars of a decided orange rufous instead of a yellow buff. This character is rather variable, and the variation in extent and degree of coloration of the collar in *xanthospila*, render it improbable that this is more than a subspecific distinction. As such, however, and as correlated with the occurrence of other subspecies of pheasants in Kansu, such as *Ithaginis sinensis sinensis*, it should certainly be recognized.

SUBSPECIFIC CHARACTERS

The chief character of the cock Orange-collared Koklass is the orange rufous colour of the collar and anterior mantle, each feather with a narrow shaft stripe of golden yellow. In well-marked individuals about half the mantle is included in this zone of colour, the collar extending clear around the neck to the chestnut of the mid-breast. Even where the two colours come in contact they do not blend. The chestnut of the ventral surface is darker than in typical *xanthospila*, and there is a corresponding clearing of the mottled grey areas, the black lines standing out very distinctly against their purer pale background. The yellow of the lower sides and flanks is very pronounced. Everywhere we find an increase of black at the expense of chestnut or rufous, as on both the upper and under tail-coverts.

A typical male shows the following measurements: bill from nostril, 17 mm.; wing, 223; tail, 228; tarsus, 66; middle toe and claw, 58.

The Orange-collared Koklass was first separated by David and Oustalet in "Les Oiseaux de la Chine," their characterization being as follows:

"*Pucrasia xanthospila*, var. *ruficollis* (Chensi).—Côtés du cou d'un roux très-foncé; tache latérale blanche peu développée et entourée de toutes parts par le noir métallique; sous-caudales noires, sans bande marron, avec une tache terminale blanche arrondie et non pas anguleuse; banie médiane marron moins étendue sur le ventre que dans le *Pucrasia xanthospila* vrai; teintes noires plus développées sur le dos et les ailes."

Their type is now in the Paris Museum.

SYNONYMY

Pucrasia xanthospila, var. *ruficollis* David et Oustalet, Oiseaux de la Chine, 1877, p. 408.

Pucrasia ruficollis Salvadori, Boll. Mus. Zool. ed. Anat. Torino, XXVII. 1912.

Pucrasia xanthospila ruficollis Declitus, Jour. für Ornith. 1897, p. 62; Courtois, Ibis, 1913, p. 16; Beebe, Zoologica, I., No. 15, 1914, p. 278; Baker, Jour. Bombay Nat. Hist. Soc., XXV. 1918, p. 523.

MEYER'S KOKLASS PHEASANT

Pucrasia xanthospila meyeri Madarasz

Name.—Specific: *meyeri*, named after Dr. A. B. Meyer, Director of the Dresden Museum.

GENERAL DISTRIBUTION

This form of Koklass has been recorded from Central Tibet, and from Yerkalo, on the Mekong River, almost at the junction of Szechuan, Tibet and Yunnan.

GENERAL ACCOUNT

I have seen three *xanthospila* from Szechuan which vary so markedly in the direction of this bird that I do not feel it deserves more than subspecific distinction. Oustalet also classes with this form Koklass Pheasants observed near Tatsienlu, by the Prince of Orleans.

The cock may, in a word, be said to be *xanthospila* with the tail-feathers of *macrolopha*. This being the case, I have not figured it. We know nothing of it, beyond the knowledge which the several known skins have given us.

The type is in the Hungarian National Museum.

DETAILED DESCRIPTION

Adult Male.—Centre of crown black, with brown tips increasing in extent until the very long, slender crest of the hind crown is all brown. The still longer posterior feathers springing from the occiput are black, with the margins glossed with steel blue, as are the feathers of the forehead, face and side crown, the ear-coverts, hind neck, chin, and throat being bluish green. A large patch of white begins just below the ear-coverts and extends downward and backward on the side neck, separating the metallic plumage of the side throat from the hind neck. A well-marked wide collar of pale yellow buff extends around the sides and hind neck, the tinge dying out on the mantle.

The type of the dorsal plumage is that of *xanthospila*, but clearer, a wide pinkish-grey shaft-stripe separating two still wider black lateral bands, the remaining narrow margin being grey. This is the pattern of the entire body, above and below, except for the central ventral line, from the iridescent throat to the lower belly, which is rich chestnut.

The colours of the wing-coverts are less clear and distinct, the grey being mottled and clouded with buff and dark brown. The inner secondaries are dark brown, mottled on the inner web with rufous, and on the outer web and margin with greyish buff. The outer secondaries are uniformly dark, save for a narrow, mottled shaft-streak and an outer margin of grey. The primaries have a whitish tip and a pale buff outer web.

The tail-feathers are like *macrolopha,* but with much more black lining and mottling on the central rectrices and upper coverts. The lateral feathers are rich rufous, especially on the outer web, with a very broad, subterminal black band and a generous white tip. The under tail-coverts are black and rufous, with very wide white tips.

The male type, which was loaned to me by the Hungarian National Museum, measures: bill from nostril, 15 mm.; wing, 233; tail, 223; tarsus, 68; middle toe and claw, 53. The left spur is 14 mm. in length, while the right is short.

ADULT FEMALE.—Like *xanthospila,* except for much more rufous tinge on the mantle and breast, and the rufous lateral rectrices, which are like those of the male. Bill from nostril, 15 mm.; wing, 218; tail, 168; tarsus, 64; middle toe and claw, 58.

SYNONYMY

Pucrasia meyeri Madarasz, Ibis 1886, p. 145; Oustalet, Ann. de Sci. Nat., XII. 1891, p. 316; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 315; Grant, Hand-book Game-birds, I. 1895, p. 285; Sharpe, Hand-list Birds, I. 1899, p. 36; Dresser, Manual Palae. Birds., pt. II. 1903, p. 671; Finn, Game-birds India and Asia, 1911, p. 66; Baker, Jour. Bombay Nat. Hist. Soc., XXV. 1918, p. 540.

Pucrasia darwinii Oustalet (nec Swinhoe), Le Naturaliste, 1886, p. 276.

Pucrasia xanthospila meyeri Beebe, Zoologica, I., No. 15, 1914, p. 278.

JORET'S KOKLASS PHEASANT

Pucrasia xanthospila joretiana Heude

GENERAL ACCOUNT AND DESCRIPTION

In a letter dated January 20, 1883, sent to the "Ibis," Père Heude writes: "Vous serez peut-être content d'apprendre que j'ai un nouveau *Pucrasia*. Je une propose de la publier sous le nom de *P. joretiana*. Il diffère des *Pucrasiae* décrits en ce qu'il n'a pas de brun ni de roux dans le plumage, soit au cou, soit aux aîles, soit aux sous-caudales. Il est de la taille du *P. xanthospila*."

No further mention, however, was made of this pheasant until thirty years later, when the bird was figured in the "Ibis" with a *résumé* of its characters.

It appears to be a closely related offshoot of the Yellow-necked Koklass with strong leanings in the direction of Darwin's Koklass; exactly what we should be led to expect from its geographical position. The two characters in which it departs most widely from *xanthospila* are the shortness of the crest and the absence of the yellow nuchal zone. Both of these characters, however, are strongly hinted at in *xanthospila*, where in a large series of specimens we find the crest of greatly varying length and compactness, and the yellow cape ranging from a strong bright straw-yellow area to a few faint yellowish streaks on the upper mantle. In *joretiana* we have a complete vindication of the assertion that the posterior part of the Koklass crest is a true crest and not "feather ears," which has so often been falsely delineated as two separate erect tufts.

The differences between *joretiana* and *darwini* are much more apparent. Most important is the double, not quadruple, pattern of the mantle and sides, a character which, in the classification I have adopted, throws the form at once into the *xanthospila* group. The ventral chestnut is darker and richer than in the more southern Koklass, while the under tail-coverts and central tail-feathers have no wide chestnut margin, but are wholly black and white.

The male type now in the British Museum shows the following measurements: wing, 225 mm.; tail, 200; tarsus, 70; middle toe and claw, 68.

The characters of this form of Koklass were first observed by the Rev. P. Heude, who named it provisionally after one of his missionary colleagues, the Rev. H. Joret, who procured the first specimen.

Joret's Koklass has been found to inhabit the mountainous region around Hoshan, in the western part of the province of Anhwei. It occurs at an altitude of two to five thousand feet. Thus its range is midway between *xanthospila* to the north and *darwini* in the more southern provinces.

SYNONYMY

Pucrasia joretiana Heude, Ibis, 1883, p. 225; Sclater, Bull. Brit. Orn. Club., XXXI. 1912, p. 7; Courtois, Ibis, 1913, p. 14.

Pucrasia xanthospila joretiana Beebe, Zoologica, I., No. 15, 1914, p. 278.

Pucrasia darwini joretiana Baker, Jour. Bombay Nat. Hist. Soc., XXV. 1918, p. 523.

DARWIN'S KOKLASS PHEASANT AND ITS ALLIES

In this group of Koklass the pattern on the mantle and much of the body plumage is quadruple, instead of double as in *xanthospila*, the two black lines of the latter group of birds being split into four.

The ventral chestnut becomes reduced in these southern Koklass, there being even in the strongest marked birds a tendency to greater distribution and correlated dilution of the pigment. It disappears entirely in the subspecies *styani*.

DARWIN'S KOKLASS PHEASANT

Pucrasia darwini darwini Swinhoe

NAMES.—Specific: *darwini*, dedicated to Mr. Charles Darwin. English: Darwin's, or Southern Koklass Pheasant. French: Pucrasia darwin. German: Chinesisches Pucrashuhn. Native: Song-by (Pine-fowl, Chinese).

BRIEF DESCRIPTION.—Male: Differs from the yellow-collared koklass, in that the mantle pattern is quadruple instead of double; the yellow collar is lacking; the ventral chestnut is diffuse and faint, and the black cross-bar on the outer tail-feathers is obsolete or reduced to a spot. Female: Like the female of *xanthospila*, but with tail-feathers as in the male of its own species.

RANGE.—East-central China in Southern Anhwei, Chekiang and Fokien.

GENERAL DISTRIBUTION

DARWIN'S KOKLASS has been found in the Province of Chekiang and Fokien, and if the single record from southern Anhwei is correct, its range is rather closely connected with that of Joret's Koklass in the central part of that province.

GENERAL ACCOUNT

This Koklass is not uncommon in the mountains of the two provinces within which its centre of distribution seems to lie. Several collectors and naturalists have met with it, but have given us almost nothing concerning its general life history and surroundings, except to say that these are similar to those of other koklass pheasants. It keeps to the mountains and is rather solitary in habit, ranging through the bamboo groves and the open hillsides in search of food. The crop of one bird contained berries and bamboo leaves.

Hardly worth mentioning is the record of a white egg said to be of this species, brought in, in a broken condition, by a Chinese collector.

DETAILED DESCRIPTION

ADULT MALE.—The head and neck are like *macrolopha*, except that the green gloss covers more of the crown, chin and throat, and the occipital crest is rather olivaceous.

In *xanthospila* I have described the general pattern as two tapering, submarginal black lines running the entire length of the feather, the margins being clear grey and the central portion mottled grey. This inner mottling is seen on close examination to be

DARWIN'S KOKLASS PHEASANT—*Pucrasia darwini darwini* Swinhoe

(Lower left-hand figure)

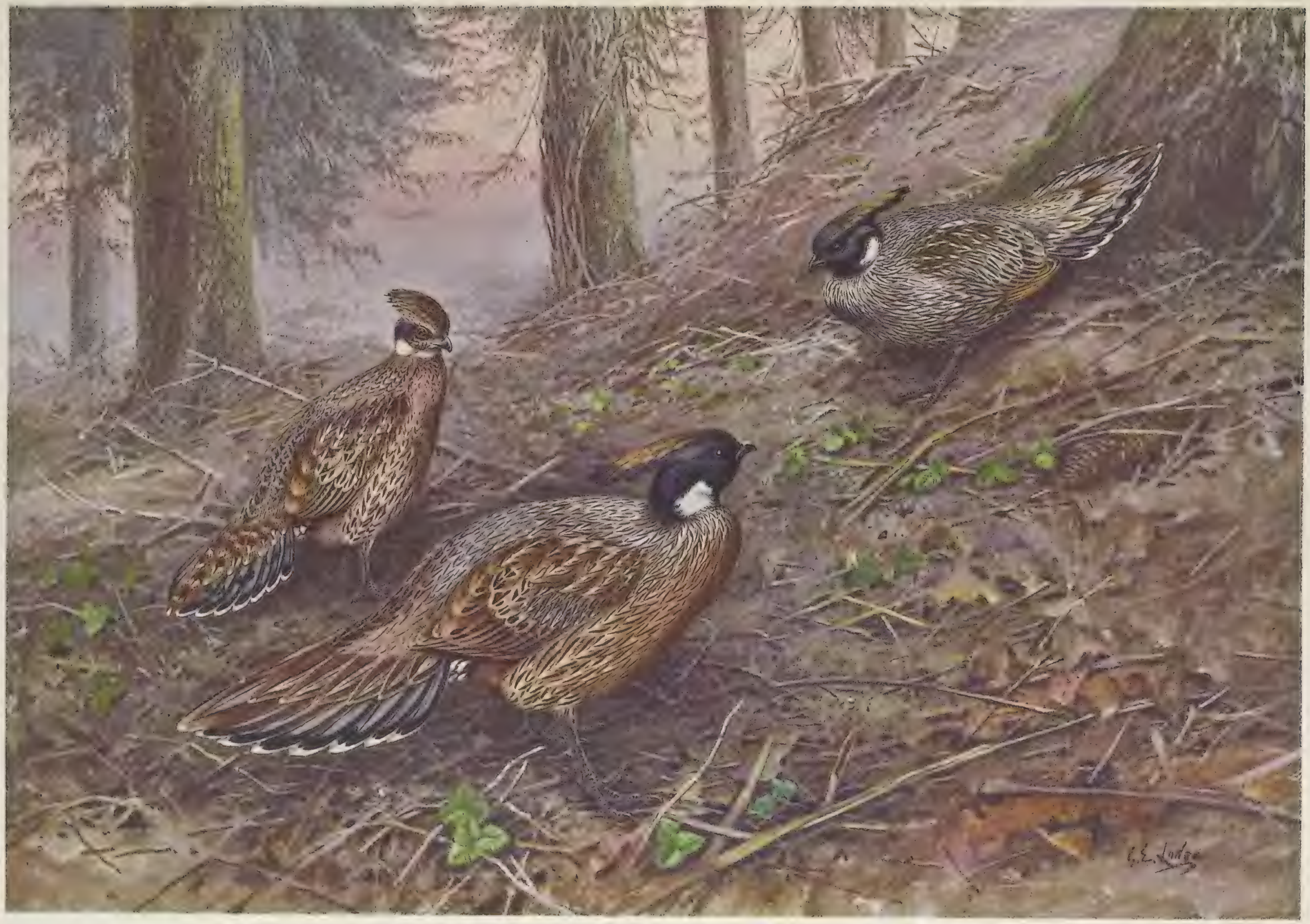
STYAN'S KOKLASS PHEASANT—*Pucrasia darwini styani* Grant

(Upper right-hand figure)

THE ventral plumage is warm chestnut in Darwin's Koklass, but clear black and grey in Styan's Pheasant.

These birds live in the uplands of the coastal provinces of east-central China, where they range through the bamboo groves on the open hillsides. They are everywhere rare and seldom seen or shot.

PLATE XLVIII.



DARWIN'S KOKLASS PHEASANT. STYAN'S KOKLASS PHEASANT.

rather linear in its extent in a few individuals, though so faint and broken that one never thinks of it as aught but indefinite mottling. In *darwini* we have a crystallizing of this mottling, and in well-marked males we find, especially on the mantle, *four* very distinct longitudinal black lines on a more or less clear grey background. On almost all the dorsal plumage this advance step in pattern complexity is evident, and clearly sets apart the birds as a distinct species. A glance at *darwini* shows the dorsal plumage to be doubly complex over that of *xanthospila*, just as the latter in turn doubles that of *macrolopha*.

The upper tail-coverts are much as in *xanthospila*, but as for the lateral rectrices, while the black border around the central grey has increased, the oblique cross-bar has disappeared, leaving either a faint spot, a short shaft line or no trace at all. The black on the under tail-coverts has usurped almost all the basal part of the feathers, while the white terminal portion has also increased. The chestnut is reduced to a small lateral spot on each web.

On the ventral surface we find a most interesting condition of affairs. We see represented the phenomenon of correlated concentration and diffusion. The chestnut mid-zone is in all conditions and states of degeneration, and even where most abundant and pure, the entire under plumage is tinged strongly with the buff which hints of the dissolving of the chestnut. There is no trace of white or even grey, except on the sides of the upper breast. This variation in the chestnut of the lower plumage is individual and wholly independent of age.

In the most strongly marked birds the chestnut zone would be called merely a broad line, while we often find an individual with only faint traces on a few feathers, or with the line irregularly broken through below the breast.

The extreme is seen in a fully adult individual, typically *darwini* in every other way, in which the chestnut is *wholly* absent on the fore neck, breast and belly.

Iris dark hazel; mandibles black; legs and feet blackish grey. Bill from nostril, 16 mm.; length, 600; wing, 234; tail, 236; tarsus, 72; middle toe and claw, 61; spur, about 15.

ADULT FEMALE.—The variation among the females is very considerable, relatively fully as great, although within much more narrow limits than in the males. We find birds which are warmly suffused with rich rufous over the entire under surface, and again through a series of gradations we pass to specimens which might well represent the colour mates of the extreme *styani* type, of a colder buff below than any other specimen of *xanthospila* or *macrolopha*.

The two lateral lines of black throat markings appear on the whole to be denser and of greater extent than in any other female *Pucrasia*, but it is on the lateral rectrices that the single important diagnostic character is to be found. As in the male, the distinction from *xanthospila* lies in the absence of the oblique black cross-bar, the grey area being entire except for the shaft-spot or short streak which is all that remains of the bar of *xanthospila*.

Bill blackish brown; iris hazel; legs and feet leaden grey. Bill from nostril, 16; length, 490; wing, 200; tail, 155; tarsus, 66; middle toe and claw, 56. Spur usually a flat scale, occasionally a diminutive spur 3 mm. or more in length.

SYNONYMY

Pucrasia darwini Swinhoe, Proc. Zool. Soc. 1872, p. 552 (Chekiang); Elliot, Monograph Phasianidae, I. 1872, pl. 30 bis; Gould, Birds of Asia, VII. 1875, pl. 25; David et Oustalet, Oiseaux de la Chine, 1877, p. 409 (Chekiang and Fokien); Garrod, Proc. Zool. Soc. 1879, p. 365; Marshall, Ibis, 1879, p. 463; Styan, Ibis, 1891, pp. 329, 499 (Chekiang and Anhwei); La Touche, Ibis, 1892, p. 410; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 316; Grant, Hand-book Game-birds, I. 1895, p. 286; Rickett and La Touche, Ibis, 1896, p. 490 (Kuatun, Fokien); Sharpe, Hand-list of Birds, I. 1899, p. 36; La Touche, Ibis, 1900, p. 49 (Kuatun, Fokien); La Touche and Rickett, Ibis, 1905, p. 58 (Mountains of Fokien); Martens, Jour. für Ornith. 1910, p. 449 (Fokien); Finn, Game-birds of India and Asia, 1911, p. 66; Mitchell, Proc. Zool. Soc. 1911, p. 521; Salvadori, Boll. Mus. Zool. ed. Anat. Torino, XXVII. 1912; Courtois, Ibis, 1913, p. 16.

Pucrasia darwini darwini Beebe, Zoologica, I. No. 15, 1914, p. 278; Baker, Jour. Bombay Nat. Hist. Soc., XXV. 1918, p. 523.

STYAN'S KOKLASS PHEASANT

Pucrasia darwini styani Grant

NAMES.—Specific: *styani*, after Mr. F. W. Styan, an English ornithologist who has done much collecting in eastern China. English: Styan's Koklass.

BRIEF DESCRIPTION.—Male: Like Darwin's koklass, but with the chestnut almost entirely eliminated from the plumage, leaving it clear black and grey, comparable only with the mantle in the former subspecies. Female: Unknown, probably indistinguishable from the female of Darwin's koklass.

RANGE.—Vicinity of Ichang, Province of Hupeh.

GENERAL ACCOUNT AND DESCRIPTION

THIS species is known only from two skins collected near Ichang on the Yangtze River in the province of Hupeh. The assertion (Ibis, 1899, p. 298) that the ventral chestnut is absent in the young bird, and that "during the course of the winter the chestnut band gradually appears," is wholly false. The amount of chestnut on the southern koklass is entirely an individual character.

The describer of this form was unfortunate in the individual which he chose as type of the species, as it is absolutely indistinguishable from several specimens of koklass from Fokien, which lack the ventral chestnut, and which come from the same locality as fully typical *darwini darwini*. The type *styani*, for example, corresponds exactly with the British Museum *darwini* specimen labelled, 1905, 12–24, 1000, Kuatun, Ex. Museum, C. B. Rickett. Both are of the same age, the latter being in somewhat worn plumage.

A much more extreme form is the individual which is described (Bull. Brit. Orn. Club, XXIII. p. 32) as a "second male," and "which has evidently been in captivity." The left wing has certainly been pinioned, but not for preventing flight, but where the wing has been almost severed by shot. The plumage of this koklass, its wing, tail and crown are all in too perfect condition for its having been in captivity even a day.

This individual represents the extreme in the *styani* character of loss of chestnut and should stand as typical of this form. The chestnut has not only been eliminated as a solid central ventral marking, but has been extirpated from all the rest of the body plumage, leaving it as a whole of a clean black and grey tone, which in typical *darwini* is seen only on the mantle. Faint buffy edges on the feathers of some of the under parts, and more distinct traces on the decomposed lower belly plumage between the legs, are the only remaining hints of this colour.

One other character not noticeable in the *styani* type male is a distinct glossing of green over the terminal black markings, such as some of the feathers of the upper mantle; not a conspicuous character, but interesting as hinting of what might result if another step should be taken in evolution.

SYNONYMY

Pucrasia darwini Styan, Ibis, 1899, p. 298.
Pucrasia styani Grant, Bull. Brit. Orn. Club, XXIII. 1908, p. 32; Courtois, Ibis, 1913, p. 16.
Pucrasia darwini styani Beebe, Zoologica, I., No. 15, 1914, p. 278.

CATREUS
CHEER PHEASANT

CATREUS

CHEER PHEASANT

Family PHASIANIDAE

Subfamily PHASIANINAE

Genus *CATREUS*

THE sombre but harmoniously coloured Cheer Pheasant stands quite alone in a number of characters, sufficiently insulated from the nearest related groups to warrant its inclusion within a separate genus. From *Phasianus* (as I define it) the Cheer is at once distinguished by the firm webbing of the rump feathers and from both this genus and *Syrmaticus* by the similarity in colouring of the sexes, and the presence of a crest.

In addition to these characters, the general carriage of the Cheer, especially when running at full speed, its notes, and the colour of its egg, all set it apart. On the other hand, we may consider it somewhat intermediate between certain groups, as combining the long, narrow tail of the true pheasants with the pinnated crest and bare facial skin of some of the kaleege pheasants.

A narrow-vaned, hairy, occipital crest is present, long and flowing in the cock, shorter in the hen. Both sexes are clad in dull buffy white, with black bars and other markings, relieved only by a dull gold or rust colour on the back and rump of the cock. The short, strong spurs of the cock are represented in the female by low blunt processes. There are eighteen feathers in the tail, which is strongly cross-barred, long, and extremely graduated, the inner pair of rectrices being at least five times as long as the outer pair. The 1st primary is shorter than the 10th; the 5th being the longest of this series.

CATREUS

	Type
Catreus Cab. Ersch. u. Grub. Encycl. sec. 1, 1851, LIII. p. 221	*C. wallichii.*
Lophophasianus Reichenb. Nat. Syst. Vög. 1852, p. xxxix	*C. wallichii.*

The genus *Catreus* consists of a single species, the Cheer Pheasant, *Catreus wallichii* (Hardwicke), and is confined to a comparatively small area in the west and central Himalayas.

CHEER PHEASANT

Catreus wallichii (Hardwicke)

NAMES.—Generic: *Catreus, κατρεύς*, a peacock-like bird, the name used by Strabo. Specific: *wallichii*, for Dr. Nathaniel Wallich, a Danish botanist, one time Superintendent of the Calcutta Botanical Gardens. English: Cheer, Wallich's or Golden Pheasant. German: Wallich's Fasan. Native: Kahir, Chihir (Nepal); Cher or Chir (Kumaon and Garhwal); Bunchil, Herril (Hills north of Mussooree); Chummun, Chaman (Chamba).

BRIEF DESCRIPTION.—Male: Top of head, including long, hairy crest, dark brown; chin, throat and breast dingy white, back and under parts pale buff; lower back, rump and flanks, pale gold or rust colour, all the plumage posterior to the neck and breast cross-barred with dark brown or black; large wing and central tail-feathers irregularly barred and mottled with dark brown and creamy white; outer tail-feathers with distinct barring of buff, and black, the latter often with chestnut centres. Female: Quite similar to the male, but with shorter crest and tail. The feathers of the head are edged with buff, the upper back is pale chestnut barred with black, and the posterior upper plumage dingy brown, mixed with black and buff; neck and breast black, buff-edged, the posterior ventral plumage rufous chestnut, also edged with buff, and black-mottled; the primaries are barred, not mottled, and the tail-feathers are in general reddish brown, not buffy white, with wide mottled bars.

HABITAT.—West-central Himalayas, in Kumaon, Garhwal, and western Nepal.

THE BIRD IN ITS HAUNTS

FAR up in the hinterland of native Garhwal one finds a land of contrasts. Leaving camp in the deep valley and working up through the soft-needled forest of deodars and spruces, I come suddenly, without warning or forest-thinning transition, upon bare open ground. I pass over a low ridge, and instead of the dense, shady, wooded slopes, I find myself upon a rocky ledge dropping down in jagged terraces, and, on the other hand, rising steeply to where the stern profile of the summit is silhouetted against the fleecy clouds. Here the slope is clothed with thick, dwarfed rhododendrons, there with only a low dense mat of vegetation, or again with the precipitous cliffs too steep to give foothold to aught but the red, scaling boulders themselves. As I push forward, clinging to the shrubs and rocks to aid my unsteady, shifting footing, I find the earth-mat of vegetation of great interest and beauty. For yards I trample upon myriads of tiny, pale-blue forget-me-nots. On the shady sides of the rocks begonias carpet the bare surface, their dainty pink blossoms shading to deep red in the centre of the petals, and waving with every breath on long, curved stalks. Flat against the rock lie the large, round, pubescent leaves, showing rich maroon below where the edges are bent over. Flowers, a dozen unnamed ones, are everywhere, striving to carpet the bare crags; white edelweiss shining like stars and visible from afar off.

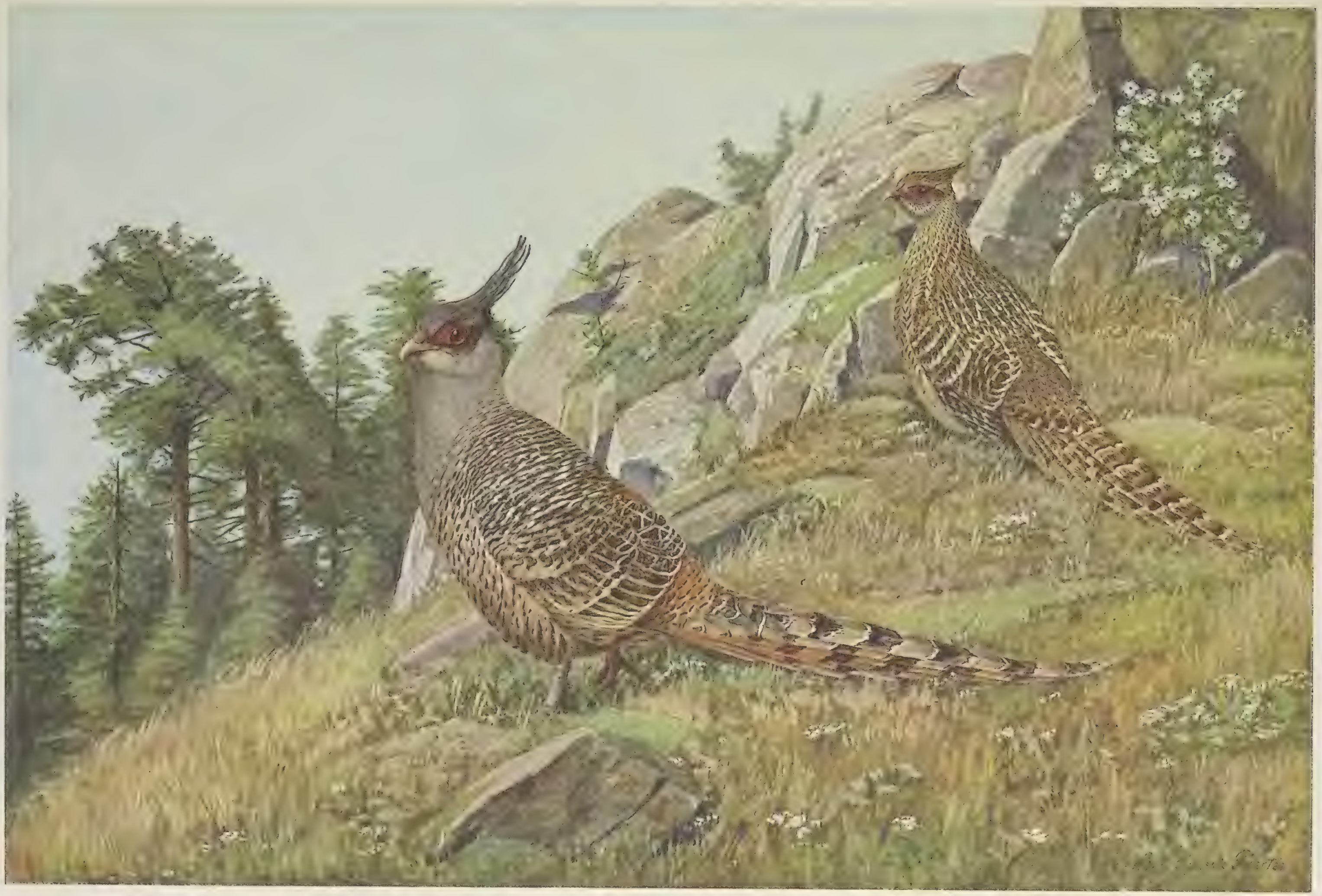
A sheltered abrupt angle offers a comfortable point of vantage for observation above and below, and here I find the most remarkable plant of all: a dwarf, tree-like growth, almost prostrate, growing downward over the face of the rocks. It bears myriads of the tiniest of white flowers and small, shiny, oval leaves, both growing almost sessile

CHEER PHEASANT

Catreus wallichii (Hardwicke)

Leaving my camp in a deep Garhwal valley, and working up through the soft-needled forest of deodars and spruces, I come suddenly, without warning, upon bare open ground. I pass over a low ridge, and instead of the shaded, densely-wooded slopes, I find rocky, grass-covered ledges dropping down in jagged teraces, and, on the other hand, rising steeply to where the stern profile of the summit is silhouetted against the fleecy clouds.

This is the home of the Cheer. Although protectively coloured when crouched in the half-dead grass, they are conspicuous when in full flight. The golden and green sheen of the back and rump at the time of their headlong rush sometimes catches the glint of the sun, and in sudden turns the tail flares out into a streaming cross-barred train, forming a marvellous spot of pattern and colour.



CHEER PHEASANT.

on very thick, tough wooden stems. So strong is this growth that one may walk firmly over its springy foliage, several feet above the actual surface of the rocks beneath. Here I found the most comfortable of seats, and lying outstretched in my weather-worn khaki, I seemed to merge completely with the outcropping reddish-brown rocks on all sides. There was more than one pair of eyes, however, which put my efforts at concealment to scorn. First a white vulture came circling lower and lower to see whether or no I was a suitable victim, and before he had decided that I possessed too much life for any hope of a meal, he was joined by another. Both soon drifted away, after a silent, critical inspection, and my next visitor was a splendid raven, which flapped unconcernedly along the slope before me, wholly unconscious of my presence until he had rounded the angle behind which I was lying. I have seldom seen sudden fear and terror so truly depicted in a bird. Although without mobile mouth or hands to express emotion, yet as the bird veered outward when almost upon me, his feet sprawled out, his feathers ruffled, his wings almost refused to bear him onward, and the raucous *squawk!* which rang out came from the very depths of his bird soul. Never have I seen a raven make quicker time downhill. His black form fairly melted from view as he shot away, and for the succeeding five minutes I could hear him giving vent to his feelings far, far below me—filling the valley with brave oaths, now that he was at a safe distance. Some jays joined in for a time, and the uproar or the sight of the excited birds caused the vultures to return, but only for a single circling swoop, then they were off for good.

I scanned the rocks carefully for some sign of life, and at last was rewarded by finding a big old "baboon," or, more properly, langur, perched upright, motionless, many yards away. He neither moved nor seemed especially interested in anything, and as it was impossible for a monkey to focus his attention upon any one thing for the many minutes during which I observed him, I made up my mind he was merely taking a sunbath, dozing on the warm stone, before making his way to the deodars a hundred yards away.

I myself began to feel the soporific effect of the bright beams, and resting my head on the springy surface I listened idly to the buzzing of flies, and watched little iridescent bees searching every blossom near by. A few minutes had passed when my eye caught a slight movement in a clump of half-dead grass and instantly I was all alert, lying with all my being concentrated on that bit of vegetation. At last my eye seemed to pick out a dim form among the grass stems—something speckled, brownish yellow, compact, stealthy. The creature, whatever it was, took one or two steps forward, and I made up my mind that it was some small feline, perhaps the rare marbled cat. As it approached the edge of the grass clump I began to see details, and I had fully made up my mind to see one of these dainty cats step forth, when a tall thin neck and head shot up and there stepped into view a full-plumaged Cheer Pheasant! Never did I feel more completely nonplussed. Another glance at the grass stems showed me that my cat's head was a bunch of dead leaves, its legs were the swaying stems, its body and coloration were those of the pheasant which had just stepped forth. I had restraint enough to close my eyes to narrow slits and lie quiet, and for fully five minutes the Cheer and I had a staring match, which the bird almost won.

Out of the corner of my eye I saw another brown form emerge from its hiding-place, and the first bird now took two more steps forward and gave a low *chuck!*

chuck! It was beyond human endurance to lie perfectly motionless for more than ten minutes under such scrutiny, and some involuntary movement on my part sent the birds back with a rush to shelter. As they showed no signs of emerging again I sat up and slid down towards them. It was as if I had fired some hidden mine. In a twinkling the air was alive with feathered bombs, and Hume's experience came vividly to mind when a wounded Cheer struck him full in the face and almost knocked him down a precipice. With wide-flaring, streaming tails, the birds whirred past me; several from my very feet shooting out and downward like rockets, others, which, all unknown to me, must have been crouched only a few feet uphill from where I had been lying, sprang into the air and veered past me on either side. I had, in fact, all unwittingly blundered into the very heart of a good-sized covey, and stopping when I did I had only sent them into hiding. So instantaneous was the outburst that it was not until the last bird had vanished that I realized and appreciated what a wonderful sight had been vouchsafed me: a half-score of great birds suddenly springing, like Jason's dragon warriors, from the very earth and hurling themselves with utter recklessness into the vast space of the great valley. How any strength of quill could ever regain the apparent lost balance and break the force of that bullet-like abandon to gravity was inexplicable. I looked about me with added interest and marked the spot for future visits.

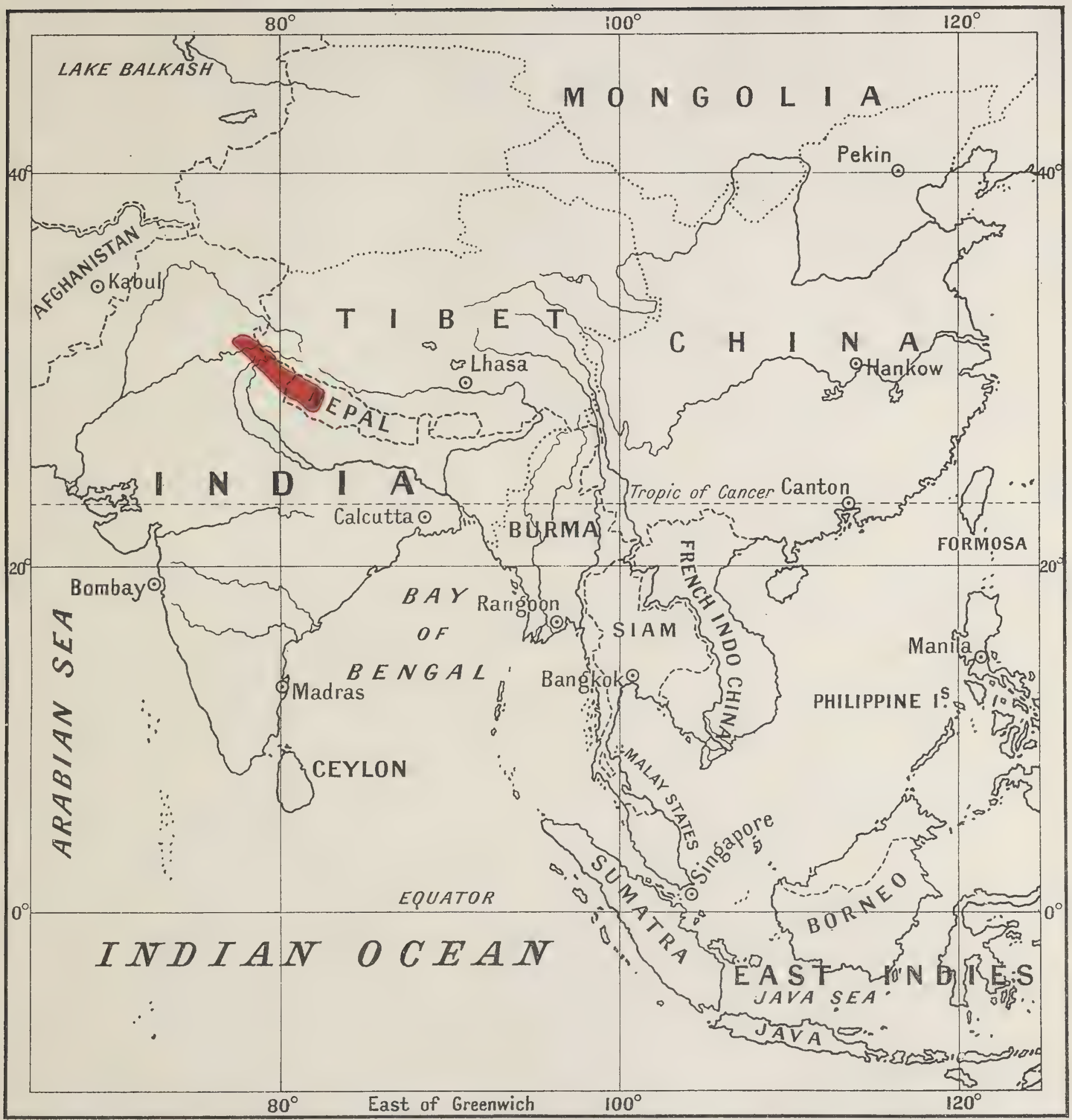
As I made my way obliquely downward, the rays of the low sun fired the red boulders, turning them to blazing copper in contrast to the black-green forests below. Not a note came from the distant scattered covey, although I listened long and carefully. The bare upper heights were silent, deserted. Only from the deodars came a vesper duet; now and then the sweet, sibilant tones of a whistling thrush, clear-cut and thrilling, to the low, muffled, running accompaniment of the cooing of doves preparing for the night, somewhere in the heart of the great Himalayan forest.

GENERAL DISTRIBUTION

The range of the Cheer Pheasant is a very limited one. It is usually given as the North-western Himalayas, but this is true only in a restricted sense. I know of no record far in Kashmir to the north-west, while from here eastward it is quite abundant in Chamba, Kumaon, Garhwal, and a number of the lesser Hill States. In Nepal it extends farther eastward than Hume thought, and there are records as far as the Gandals River. Even this, however, gives it one of the narrowest areas of pheasant distribution, and when we remember that within this circumscribed habitat the birds are found only between four and ten thousand feet elevation, we realize to how sharply demarcated a zone of the earth's surface a single isolated species of large, non-migrating bird may be confined. This, too, not upon an island, but in the heart of a great mountainous region most of which would seem to offer suitable haunts for the pheasant. Cheer show a seasonal migration downward from January to March, being forced from the bare heights in winter by the snow.

GENERAL ACCOUNT

I had the Cheer Pheasant under observation for only a very few weeks, and hence can speak of it at first hand during but a limited portion of its annual life. Hume



80°
100°
120°
40°
20°
0°
LAKE BALKASH
MONGOLIA
Pekin
AFGHANISTAN
Kabul
TIBET
CHINA
Lhasa
Hankow
NEPAL
INDIA
Tropic of Cancer
Canton
Calcutta
BURMA
FORMOSA
Bombay
BAY OF BENGAL
Rangoon
SIAM
FRENCH INDO CHINA
Manila
ARABIAN SEA
Madras
Bangkok
PHILIPPINE I^S.
CEYLON
MALAY STATES
Singapore
SUMATRA
BORNEO
EQUATOR
INDIAN OCEAN
EAST INDIES
JAVA SEA
JAVA
East of Greenwich

H.F.& G. Witherby, Publishers.

Stanford's Geograph! Estab!

MAP SHOWING THE DISTRIBUTION OF THE CHEER PHEASANT.

together with his friend Wilson have given very excellent accounts of this species based on many years' knowledge as sportsmen, and from such a point of view the details leave little to be desired.

"The Cheer is extremely locally distributed, and seems to me very capricious in its choice of habitations: on one side of a river you meet with plenty in suitable spots; on the other side you may search fifty square miles of most likely-looking country and never see one.

"From six to seven thousand feet is the elevation at which, in October, they are most common, but in winter and spring they go lower, and some even breed lower, and in summer they *may* be met with up to at least ten thousand feet (I myself killed a pair of old ones late in June at fully this elevation), and probably higher. Of course they are birds of the outer or wooded hills, and once you cross a high snowy ridge that effectually arrests the clouds of the monsoon, into dry, more or less treeless regions, like Lahoul, Spiti and Ladákh, you lose the Cheer and all the pheasants but the snow cocks. They are all more or less birds of the forest, and all belong to the zone of abundant rainfall.

"The best places in which to find Cheer are the Dangs or precipitous places, so common in many parts of the interior; not vast bare cliffs, but a whole congeries of little cliffs one above the other, each perhaps from fifteen to thirty feet high, broken up by ledges, on which a man could barely walk, but thickly set with grass and bushes, and out of which grow up stunted trees, and from which hang down curious skeins of grey roots and mighty garlands of creepers.

"If the hill above be thinly wooded, and on some plateau below there are a good number of millet and princes'-feather fields, you are, in a Cheer district, next to certain in the autumn to find a covey on the upper ledges of such a spot about ten o'clock in the morning.

"Then what a morning's sport you may have. You get on some knoll or spur commanding the lower portions of such a series of clifflets, where you will be clear of the stones that the dogs and men inevitably dislodge. The dogs are put in at the very top, a few of the men climbing with them on such ledges as are accessible; the stones rattle down fast, a pahari slips, shouts, and saves himself by clinging to a branch; all the dogs bark, every man looking on shouts out a different piece of advice if the slip was serious, or a separate gibe, if it was trivial, for the benefit of the slipper; all this comes down to you three or four hundred feet below, a confused babel; you scream out 'silence,' then a sharp yelp, a volley of screeching chuckles, you see a dark object shoot out from the face of the upper cliffs, a moment, and it suddenly contracts in size, and the next hurtles by you, like a falling thunderbolt, and if you do *not* miss it, it is quite certain that it is not the first time you have shot Cheer.

"But whether hit or missed, there is no time to inquire now; good men are below to mark every bird that comes down, dead or alive, half-and-half.

"Another and another of these animated projectiles pass you in their downward rush, some out of shot, some so close that it is impossible to fire, and very often three, four, five in such rapid succession that even with two doubles, in the old muzzle-loading times, it was impossible to fire quick enough.

"Twelve or more perhaps have been counted, the dogs and men have worked down to the level at which you stand, when you catch a glimpse, scuttling round the base of the knoll, of the old cock, going at railroad pace, with head down and tail straight out, and you arrest his career (if you are sharp enough) then and there.

"Then comes the work below; the dogs are called close to heel, and following the shouted directions of the markers, you move about here and there, now finding a dead bird, now having a wounded one brought you by a dog, and now getting nearly knocked down by one whose tail absolutely brushes your face as it rises under your feet from the centre of a small patch of cover, which, on the persistent outcries of the markers, you have been vainly hunting through, backwards and forwards, for the ten previous minutes.

"But you do not account for all, unless you are a better shot than I ever yet saw, though in these days of breech-loaders far fewer ought to escape—some wounded birds, and many of the unwounded will have given leg bail, and the distances they will then go is surprising. I have, quite by accident, recovered by a dog pouncing on it a Cheer, with pinion broken, the blood still fresh on it, fully three miles down a valley at the upper part of which two or three hours previously I had had a beat.

"The sport is very exhilarating, but you are generally lower down than in koklass-shooting; you are more closed in; the air is not so fresh and bright; there are no superb wide-reaching views, changing as you move; a glimpse of the snows is rarely to be caught; you have no magnificent forest about you, and when brought to bag your bird is very poor eating compared with koklass or woodcock.

"The force with which Cheer descend is almost incredible. Other pheasants in descending keep the wings a little open; these birds pass one at such a fearful pace that it is impossible to be certain, but it always appeared to me that Cheer quite closed their wings, and I attribute their power to do this to their enormous tails sufficing to guide them. When within a hundred feet—I speak by guess—of the level at which they intend to light, suddenly out go the wings, the tail is spread to its fullest expanse, the bird looks double the size it did a second before, and sweeps off in graceful curves right or left, shortly dropping suddenly, almost as if shot, into some patch of low cover. If no shots have been fired, you may walk straight down, and ten to one find him exactly where you marked him.

"At times you get them on the hillsides, where the trees are thin, but there is no great sport to be got there. The whole covey is scattered over an endless distance; you must make a line; the birds *will* get up in front of any one but the gunner, and run downhill in a most provoking manner. If you get two brace in such a situation after five or six hours' fagging you may be well pleased, unless the covey happens to have an antipathy to dogs, as they occasionally seem to have in out-of-the-way places. Then almost every bird that is found by these flies straight up into the nearest tree, and thence, standing almost on tip-toe on some horizontal bough, with feathers erected and tail spread, chuckles or crows, or whatever you like to call it, at the barking and yelping cockers below, till you walk up and (tell it not to your friends when you return to camp) solemnly pot him or her then and there.

"I was once nearly killed by a Cheer. I was standing in a rather awkward place, the extreme outer edge of a plateau jutting out for twenty or thirty yards near the base of a patch of precipitous ground; behind me was a sheer fall of about forty feet; a Cheer was flushed above, it was coming right for me. I let off the gun somehow, and almost before it seemed well off, my gun was dashed aside and I got a blow in the face that made my nose bleed, and knocked me over the precipice, to the bottom of which my gun fell, as should I also, had not the two men squatting at my feet seized my legs. Yet this bird, as the state of the body proved, must have been at least thirty yards from me when the shot struck it, and it was stone dead when I had sufficiently recovered myself to think of it."

"This species," says Wilson, "is an inhabitant of the lower and intermediate ranges, seldom found at very high elevations, and never approaching the limits of forest.

"Though far from being rare, fewer perhaps are met with than of any other kind unless it is particularly sought for, always excepting the Jewar, *Tragopan melanocephalus* (Gray). The reason for this may be that the general character of the ground where they resort is not so inviting in appearance to the sportsman as other places; besides, they are everywhere confined to particular localities, and are not, like the rest, scattered indiscriminately over almost every part of the regions they inhabit. Their haunts are on grassy hills with a scattered forest of oak and small patches of underwood; hills covered with the common pine, near the sites of deserted villages, old cow-sheds, and the long grass amongst precipices and broken ground.

"They are seldom found on hills entirely destitute of trees or jungles, or in the opposite extreme of deep shady forest; in the lower ranges they keep near the top of the hill or about the middle, and are seldom found in the valleys or deep ravines. Further in the interior they are generally low down, often in the immediate vicinity of the villages, except in the breeding season, when each pair seeks a spot to perform the business of incubation; they congregate in flocks of from five or six to ten or fifteen, and seldom more than two or three lots inhabit the same hill.

"They wander a good deal about the particular hill they are located on, but not beyond certain boundaries, remaining about one spot for several days or weeks, and then shifting to another, but never entirely abandoning the place, and year after year they may, to a certainty, be found in some quarter of it.

"During the day, unless dark and cloudy, they keep concealed in the grass and bushes, coming out morning and evening to feed. When come upon suddenly while out, they run off quickly in different directions, and conceal themselves in the nearest cover, and seldom more than one or two get on the wing. They run very fast, and if the ground is open and no cover near, many will run two or three hundred yards in preference to getting up.

"After concealing themselves they lie very close, and are flushed within a few yards. There is, perhaps, no bird of its size which is so difficult to find after the flock has been disturbed and they have concealed themselves; where the grass is very long, even if marked down, without a good dog it is often impossible to flush them, and even with the assistance of the best dogs not one-half will be found a second time. A person may walk within a yard of one, and it will not move. I have knocked them over with a stick, and even taken them with the hand. In autumn the long grass, so prevalent about many of the places they resort to, enables them to hide almost anywhere; but this is burnt by the villagers at the end of winter, and they then seek refuge in low jungle and brushwood, and with a dog are not so difficult to find.

"Both males and females often crow at daybreak and dusk, and in cloudy weather sometimes during the day. The crow is loud and singular, and when there is nothing to interrupt, the sound may be heard for at least a mile. It is something like the words *chir-a-pir*, *chir-a-pir*, *chir*, *chir*, *chirwa*, *chirwa*, but a good deal varied; it is often begun before complete daylight, and in spring, when the birds are numerous, it invariably ushers in the day; in this respect it may rival the domestic cock. When pairing and scattered about, the crow is often kept up for nearly half an hour, first from one quarter, then another; and now and then all seem to join in a chorus. At other times it seldom lasts more than five or ten minutes.

"The Cheer Pheasant feeds chiefly on roots—for which it digs holes in the ground—grubs, insects, seeds and berries, and, if near cultivated fields, several kinds of grain form a portion of its diet; it does not eat grass or leaves like the rest of our pheasants.

"This bird flies rather heavily, and seldom very far. Like most others, it generally utters a few loud screeches on getting up, and spreads out the beautifully barred feathers of its long tail both when flying and running. It does not perch much on trees, but will occasionally fly up into one close by, when put up by dogs. It roosts on the ground generally, and when congregated together the whole flock huddles up in one spot. At times, however, they will roost in trees and bushes.

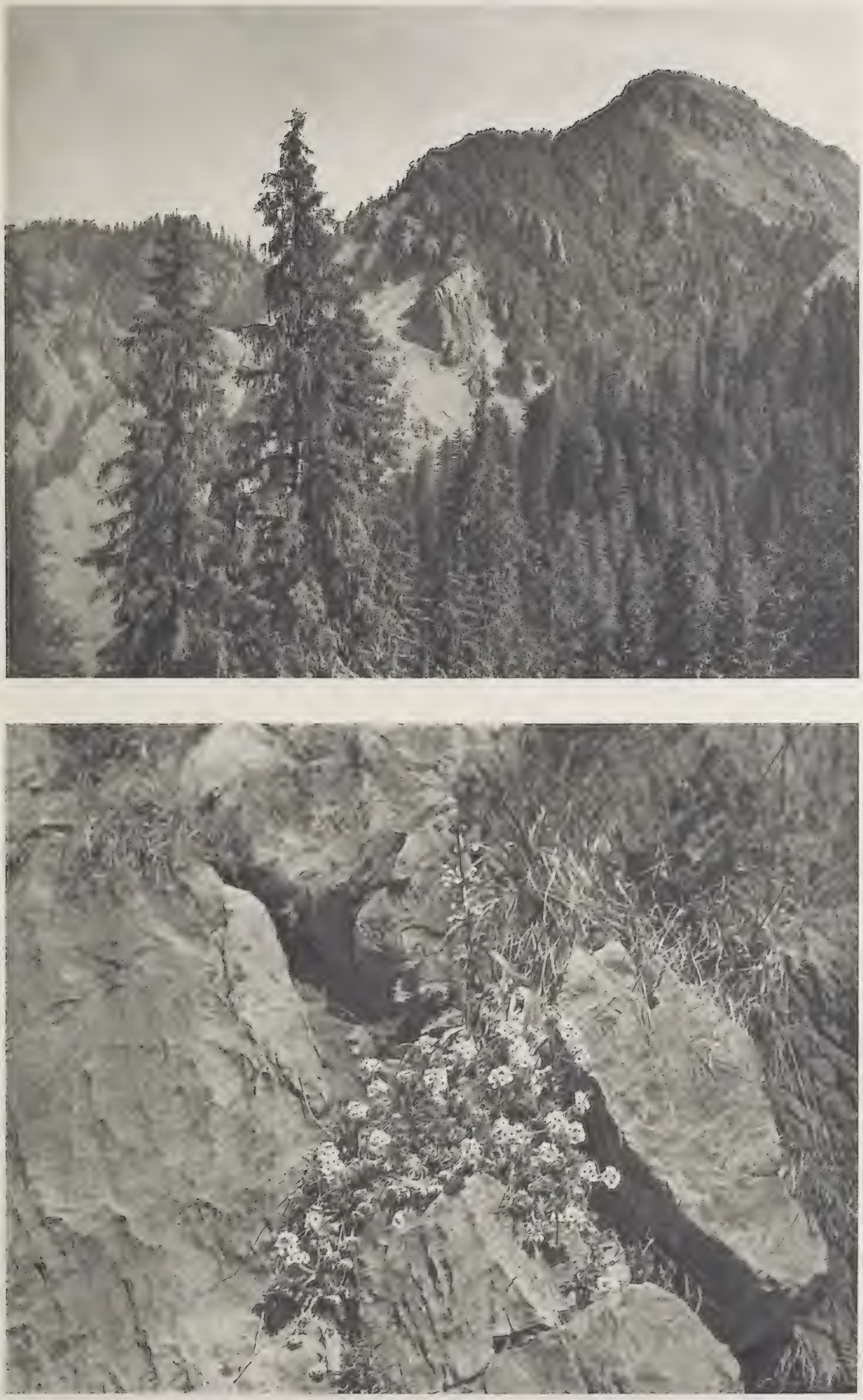
"The Cheer breeds throughout the lower ranges of the Himalayas, within the limits already indicated, at elevations of from four to seven or eight thousand feet. Their nests may be met with from April to June, most of the eggs, however, being laid during May, early or late in the month, according as the season is a cold or warm one. Personally, I have only taken three nests of this species altogether, so that I cannot generalize safely; but my impression, derived from this limited experience, is that they always nest near or about the foot of some very precipitous hillside, what the natives call '*Dang*,' cliffs not absolutely vertical, but still the next thing to it, broken up into ledges and steps, and studded with down-trailing bushes, tufts of grass, and, growing here and there out of some larger cleft or wider ledge, a few stunted trees.

"I was once living at a small house behind the 'Camel's Back' at Mussooree, a house which was afterwards converted into a dispensary. About a thousand feet below, and perhaps half a mile from this, is a precipice such as I have described, and at the foot of this, in the midst of a tuft of grass, I found, on the 3rd of May, a nest of the Cheer containing two eggs. It was a mere depression, some fourteen inches in diameter and three inches in depth in the centre, obviously scratched by the birds, and strewed, rather than lined, with a few scraps of grass. Eleven more eggs were laid, one daily, and then the hen began to sit. One egg was addled; the rest were hatched some time in June, but I kept no note of the date. The whole family then took up their residence in the precipice, and there remained until the middle of October, when, the young being nearly full grown, I commenced shooting them, and shot a brace once or twice a week, until there were only two or three young ones left. At 11 a.m. they were always in the upper part of the precipice; my dogs used to be put in, and would rummage along the ledges and turn them out, when, after a few strong strokes outwards from the face of the cliff, they would all but close their wings and come down past me (I always stood in the same place, on a knoll at the foot of the cliff, where I was safe from stones) like lightning. I remember well missing every single shot the first day, but the next time

WESTERN HIMALAYAN HOME OF THE CHEER PHEASANT

Where the spires of tens of thousands of deodars and spruce climb the mountains, and close around the out-jutting boulders, the hardy Cheer Pheasants spend their days, feeding, sunning themselves, or dusting their plumage at the very brink of the precipices.

The open slopes and cliffs are steep, and as I climbed them in search of the Cheer, I had to cling to the shrubs, bright with clusters of scarlet rhododendron blooms, and to the rocks to aid my unsteady, shifting footing. For yards I trampled on edelweiss and myriads of tiny, pale blue forget-me-nots, while on the shady sides of the rocks begonias carpeted the bare surface, their dainty pink blossoms waving on long, curved stalks with every breath of the mountain breeze.



WESTERN HIMALAYAN HOME OF THE CHEER PHEASANT.

I got a brace, and after that I never went home without one or two, and, strange to say, my weekly, and sometimes bi-weekly, visits never had the effect of driving them away, and what is more, in October seven years afterward, when I again visited the place, I found my friends in their old locality, and got three brace then and there.

"I found another nest with several eggs late in May, in a very similar situation, on Nagtiber, at, I suppose, an elevation of about six thousand feet, and a third, containing four eggs, which I took very early in May, a few miles from Juggutsook, in the upper valley of the Beas. This, too, was similarly situated."

My observations on the preference of individuals of this pheasant for some one locality are, of course, not as valuable as if extended over a longer period of time. The flock which I so unexpectedly flushed from the steep hillside did not visit the same spot again within the succeeding two weeks. In another locality some distance away later in the spring I found Cheer in pairs and beginning to nest, and here they were, of course, exceedingly sedentary, and I could tell within a few dozen yards just where I could find them. Fortunately there were no sportsmen about, nor, judging from the birds, had there been any shooting hereabouts, and I had no difficulty in watching the birds from well-selected points of observation. I spent many hours with a pair of Cheer in full view, but sometimes after a whole afternoon of such observation I would have no fact of interest to record. Much of the time I might as well have watched a rooster and hen from a native barn-yard as far as unusual traits were concerned.

I regretted not being earlier on the ground in order to be able to watch the method of courtship employed. In spite of the number of times that this species has bred in captivity, no record has been kept of this interesting performance, and all that has been written of it is a single paragraph by Finn: "This species is said not to show off, but a vicious male in the Calcutta Zoo used to show off in the common pheasant's attitude, aslant with spread tail, when trying to attack, and as the show position so commonly seems to be the fighting one too, I expect the species does thus display when courting." I saw this twice in wild birds, both times as a challenge or pose of defiance, once against a crow and again when a brace of partridges approached closely to the Cheer's nest. The attack, which was not actually made in either case, was apparently intended to be by means of the spurs. The pheasant did not approach the intruders directly, but with a curious sidling gait which took it in a curve first to one side then to the other. Whichever side was presented was the one upon which the display was made, and which differed in no essential particular, as far as I could see through my field-glasses, from the courtship attitude of the common pheasant. The back was flattened, the wings lowered and raised respectively, and the tail slanted and spread widely and rather suddenly toward the end of the sidling walk. In fact it was the sudden display of this conspicuously marked and coloured organ which dismayed the objects of the Cheer's agitation, causing the crow to take to flight with a low croak and the partridges to run to cover. The Cheer recovered his equanimity at once, and after standing at attention for a few moments, began to wander off down the ridge without a glance in the direction in which I knew his nest to be.

Within a radius of a mile there were three pairs of Cheer, all, I am certain, nesting, although I was able to find the nest of but one. By walking slowly past the haunts of each pair, and keeping a very sharp look-out, I was able almost always to see either one or both birds dive suddenly into a tuft of grass, or very rarely to flush from almost under my feet. When the first happened I would walk straight on as if I had not seen the birds, and then, when out of sight, circle around and wriggle my way behind boulders and scrubby trees to some overlooking shelf or mass of vegetation. I found that my umbrella observation tent was most useful with these birds, and after the tent had been in position for only twenty-four hours, I could enter it and count on the birds recovering their confidence within ten or fifteen minutes. But, as I have said, such a splendid chance of observing sedentary pheasants in comparatively open, unobstructed country was robbed of much of its pleasure by the very bourgeois behaviour of the birds. During the time of my stay I saw no other but the three pairs of Cheer near this place, although impeyan, koklass and kaleege were not far away. The covey of eight or ten which I have described is the only flock I observed. Other observers give us four to twelve, or six to twenty individuals as being the number sometimes found together at other times than the breeding season.

It was most interesting and significant to see to what an extent both cocks and hens trusted to concealment by squatting rather than running or flying, and I consider it an expressive commentary on the protective value of the plumage coloration of both sexes of this species as compared with that of others such as the impeyan. It is well enough to sit in our study or to take the skin or mounted specimens of these various birds to the woods and fields and prove to our entire satisfaction that the colours of all can be made to harmonize with some one or other situation. But it is proof past convincing when we see an impeyan get up and betake his armour of rainbow metallic tints off, as far away as the bird can detect us; and again when we almost put our foot upon a cock Cheer as it squats closely amid the stubby grass which so nearly approximates its own yellow buffs and browns—it is proof of the relative protective values which is as good circumstantial evidence as Thoreau's trout in the milk-pail. If we cannot trust the relative instinctive reactions at the approach of danger which not one, but myriads of lifetimes have stamped upon the behaviour of absolutely wild birds, many of which have never seen man before, we assuredly cannot accept the evidence of artificial manipulation of dead actors and ill-adapted scenery in a land on the opposite side of the globe from where the age-long evolution of the pheasant itself took place.

Like many dull, protectively hued birds, these pheasants are most conspicuous when in full flight, apart from their abrupt removal from the assimilating hues of the grasses. The golden and green sheen of the back and rump at the time of their headlong rush sometimes catches the glint of the sun, but the tail flares out into a streaming cross-barred train, and when the bird veers suddenly to clear a low tree or projecting boulder, this fan spreads widely and becomes for a fraction of time a most conspicuous spot of pattern and colour.

The flight of the Cheer, while for sheer speed excelled by probably few other birds, yet is heavy and far from actually strong. The bird has marvellous ability to turn and stop itself, but to see it beating uphill or even on a level is to realize that gravity is the prime factor in its wonderful bursts of speed, and that trusting to muscular effort alone, it would be able to cover only very short distances. Unless turned aside by some barrier, or to escape danger by taking to a tree, I do not suppose the bird would ever willingly fly upward. No matter how far downward the pheasant may go in its single headlong flight, it seems invariably to return on foot, working upward sometimes by an extremely indirect route. More than once I have known one of the pairs of birds which I had under observation to flush and scale far down into the valley, and some two hours later to return along the mountain-side from the north, a route which must have taken them several hundred yards out of the most direct way back. There appears to be no especial significance in the Cheer's perching in trees. They will do this when slightly alarmed by the approach of an animal such as a dog, and the fact of having a nest near by seems also to bring about this habit more frequently, probably owing to a disinclination to leave the vicinity until compelled to do so.

Many years ago it was stated by some author, and since then has been religiously reiterated in many, many volumes, that the Cheer Pheasant feeds on grubs, insects, seeds and berries, and *never* touches grass or leaves. I was able to examine only a few crops of freshly killed birds, but in two I found an abundance of small leaves, partly comminuted. On the whole, however, the statement as regards their diet is correct, and I give the exception only to show how futile it is to formulate hard and fast rules when considering the lives of those very adaptive and individual creatures—the birds of our earth.

Cheer are essentially diggers of the soil, like impeyans, only both sexes are more often found together, and except when the hen is actually incubating, they are seen in pairs labouring close together. Like the impeyans, they have favourite digging places, and where grubs or terrestrial tubers are abundant they will often work down a foot or more below the surface of the ground, their bodies almost wholly concealed, their long tails fraying out behind them against the soil and grass, and every second or two the head and neck shooting up for a glance in all directions. Where the ground is grassy and pliable, one may see where these pheasants have fairly ploughed up the turf for many yards, but this is a rare combination of favourable conditions, and usually one finds isolated diggings here and there among the outjutting boulders and rocky ledges. I once shot a Cheer in the very act of digging, needing it both for the pot and for my investigations, and found eleven wire-worms and a half-dozen fat, white cockchafer grubs which it had but recently unearthed and swallowed. It was not a rare sight, when I was watching a single Cheer cock, to see it pick ants or other small insects from the grass stems and low shrubs, and several times I saw the birds pursue and capture some winged insect, either grasshopper or small moth, which had been disturbed into flight.

I could not solve the drinking habits of the birds to my complete satisfaction. On many days I am positive the birds did not, as was the habit of the impeyan and koklass in the vicinity, go down the slope to water in the evening. On only two days did I see both birds of a mated pair wander off, and then I was not able to follow them. Whether their excessive insect diet supplies them with sufficient moisture, or whatever the reason, Cheer certainly do not show the regular migration to and from water once or twice a day which is so marked a feature in the daily life, for example, of some of the kaleege pheasants.

Neither did I observe that the birds ceased wholly to feed in the middle of the day, although many of the days which I spent in this region were partly or wholly cloudy, and this may have had something to do with the more or less uninterrupted diurnal activity of the pheasants. When the sun shone with unusual vigour, I have seen a hen Cheer go to a bit of old dug-over ground and give herself up to the pleasure of a thorough dust-bath, working sideways, downward and scooping the dust over her body with one wing, exactly as a barn-yard fowl would do. She never, however, relaxed her vigilance for a moment, and even when apparently wholly absorbed in her wriggling and spasmodic stirring up of the dust, without warning she would rise up and stand with concentrated eyes and ears until the suspicion of danger passed. Not until then would she shake or settle her ruffled plumage and return to her occupation.

I have never seen a Cheer take to a tree to roost nor even to a low bush, but have seen a bird squat closely under a tuft of grass in full view of my observation tent, and have been certain, at least until the last tinge of afterglow faded and the night had closed down, that the pheasant was still there.

The Cheer does not come into very close touch with any other pheasants, although I have watched a pair of birds in early morning, and have known by sight or hearing that impeyan, tragopan and koklass were within a quarter of a mile. But I have never actually seen the birds together on the same slope. The koklass keep pretty consistently to the forest cover and the impeyans haunt the open spaces several thousand feet higher. In all my many days of intensive study of the Cheer I saw no direct tragedy, though the appearance of any large raptore sent the birds to shelter like a flash. In fact they always discovered the eagle or hawk long before I did, and it was always some time after they had vanished that, through the ventilation wires of my observation tent, I was able to follow their glances upward to the dreaded speck high in the blue sky. Living their lives thus in the open, they were past masters in the matter of discrimination of dangerous from harmless raptores, and, unlike some forest or jungle-haunting pheasants, I have never known them to pay more attention than a quick, careful scrutiny to any vulture which happened to soar suddenly into view.

Near the edge of a deodar forest I saw a big langur monkey one day galloping along on three legs, with a large trailing object held close to his body in one of his fore-arms. A glance through the glasses showed this to be a dead, bedraggled Cheer Pheasant. Although my experience and that of others has shown that one may approach very closely to these birds, so complete is their trust in their concealing garb, and Wilson relates the almost incredible fact of being able to pick a Cheer up in the hand, yet I doubt much whether these birds would ever permit themselves to be caught by a langur. This bird was very probably wounded or dead when found by the monkey. There is small doubt, however, that such animals work havoc among eggs and chicks, and a black eagle has been shot with the inside of the mouth and throat covered with small pieces of egg-shell, probably of this pheasant. I can say nothing further with certainty of the enemies of the Cheer, but on excellent authority (B. B. Osmoston) I am told that chief among these are the Indian marten, the leopard-cat, the Nepal hawk-eagle, the crestless hawk-eagle and the jungle crow, the latter, of course, taking the eggs and young chicks only.

Wilson has well described the morning and evening call of the Cheer, although when the notes are uttered hastily and run together they strike the ear as a sort of curious tremulous or querulous squeal, very penetrating and characteristic. It is from the sound of the separate notes, which are often given in slow succession or even singly, that the native name of the bird is derived, the hill-tribes calling it *Chèr*, pronounced to rhyme with the French *mère*. The wild, frantic vocal outburst which is heard when the birds are suddenly flushed cannot better be described than a series of screeching chuckles. Observing the birds, as I did many times, while they were wholly undisturbed, I was able to hear something of their more conversational utterances. The content note of the hen, and occasionally of the male as well, is a low, sleepy *waaaaaaak*, *waak*, *waak*, exactly like the similar utterance of a domestic fowl when she is searching idly for food. When a pair of Cheer were digging side by side they mumbled inarticulately to themselves now and then, while a sharp *tuk!* uttered almost involuntarily, would bring the other bird at once to full attention. If suspicion of danger then increased, the cock might leap up to the nearest mound of turf and utter the *tuk! tuk! tuk!* twenty or thirty times, his whole body twitching at each note with the effort of utterance. When approached in captivity the Cheer, if at all pugnacious, will often give voice to a murmuring through almost closed beak, much like the characteristic note of the silver pheasants. Once when a bird dashed past me, sending forth the flood of agonized chuckles, it dipped just over a ridge below me, and almost at once gave vent to a series of plaintive cries, as if it might have been captured and held by some enemy. I hastened after it, but the outcry ceased, and I could find no trace of pheasant, enemy or tragedy, and cannot conceive what caused the sudden change in notes.

First-hand accounts of the habits of the Cheer are too rare to omit any of the notes on the nesting. Wilson says that "the female makes her nest in the grass or amongst low bushes and lays from nine to fourteen eggs of a dull white, and rather small for so large a bird. They are hatched about the end of May or beginning of June. Both male and female keep with the young brood and seem very solicitous for their welfare."

I had erected my umbrella tent for two days on a bit of rocky shelf half-way down a steep slope in central Garhwal, and had spent many cramped hours watching a cock Cheer doing little or nothing, but remaining persistently near a patch of young deodars. One afternoon as my eye was glued to one of the loop-hole slits, running idly over the expanse of coarse grass and fern, a hen Cheer suddenly appeared from nowhere, standing and looking about her. Soon she took a step forward, and then turned and walked back beneath the low, drooping branches of the conifer, and shortly reappeared on the other side of the clump of small trees. As both birds then vanished I returned to camp after another hour of vain watching. The next morning neither cock nor hen Cheer was visible, and ensconced within the tent I began searching for signs of them. As my eye rested for a moment on the spot where the hen had appeared, I suddenly detected her through the grass stems squatted close to the ground. I thought she was still alarmed at my entrance into the tent, but as an hour passed and she did not move, while the cock marched past several times, feeding as he went, my suspicions began to be aroused, and I suspected that she was actually sitting upon eggs. About three in the afternoon she rose as before, stood motionless a minute and repeated her exit to the very least detail—a single step forward, then a sharp turn beneath the deodar branches and out on the opposite side. When she was well away I crept out and found six eggs, unusually heavily speckled for Cheer eggs. There was no hollow in the ground, but a mere depression in the steep slope of grass stems, with two or three feathers of the bird which had accidentally lodged there. I had to bend the grass and ferns down to photograph the nest, and when I left I replaced them as best I could. This disturbance did not affect the parents, and indeed a few days afterward a terrific hailstorm flattened all the weak turf vegetation, together with my tent. When I left a week later she was sitting as closely as ever on five eggs, as I had taken one. The embryos at this time being of large size, the eggs would hatch in about five days more, the duration of incubation being twenty-eight days. I trust no eye of eagle or mink found her out before that time.

The eggs are of a broad oval shape and somewhat glossy. The background varies from pale stone-colour to cream. While some are entirely plain, quite unmarked, others show a few reddish-brown dots at the larger end, and the extreme of marked eggs is where, as in those which I photographed in the nest, the entire shell is sprinkled more or less thickly with fine dots and specks of reddish brown, much as in the eggs of the red-legged partridges *Caccabis* (now *Alectoris*). An even heavier-marked specimen is figured by Mitchell. Thus we see that the eggs of the Cheer are entirely unlike those of the genus *Phasianus*, with which it has so frequently been associated; and, on the other hand, they have none of the warm *café au lait* hue of the eggs of the impeyan, koklass and kaleege, so that in this character the Cheer stands quite isolated. As Wilson has remarked, the eggs are somewhat small for the size of the bird, but this is only in proportion to the number laid. Compared with the impeyan pheasant, we find the Cheer much the same-sized bird, measuring (exclusive of the tail) about 430 mm., as against the very slightly larger impeyan's 440. The average size of Cheer eggs is 55 × 39; while those of the impeyan measure 65 × 45. The compensation lies in the fact that the Cheer deposits from nine to fourteen eggs, while the impeyan lays only from two to five or very rarely six.

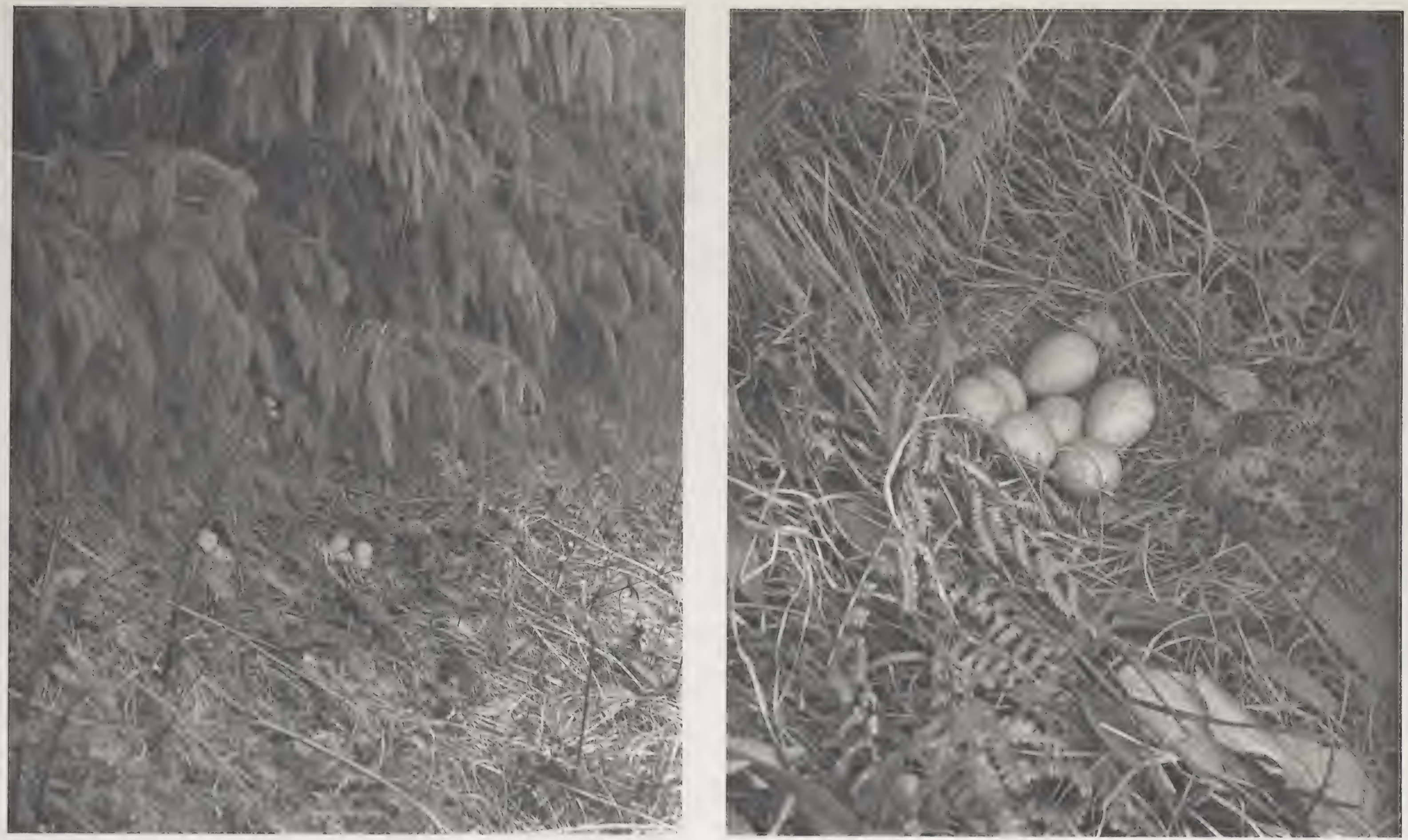
The Cheer will hardly last much longer except in the most inaccessible of their haunts. In reserved forests there is a close season from the 1st of March to the 15th of September, but elsewhere it is shot at any season, as it is counted an excellent dish for the table, and its habits of lying low and then trying to escape with a sudden terrific burst of speed appeals as a challenge to the skill of every hunter Sahib.

CAPTIVITY

The Cheer pheasant has long been a familiar bird in Zoological Gardens and large private collections, but, like the impeyan, it has completely failed to fulfil the great hopes which early breeders entertained of establishing this species in foreign countries in such numbers as the common pheasant. When the Cheer has been turned out with other pheasants in England, Germany and elsewhere, the result has been invariably the same. Unlike the other species which seek cover in woods and undergrowth, this pheasant at once wanders afar in search of open grassland, and seems to lack all homing instincts. It has, however, bred many times in captivity. The Cheer pheasant seems

NEST AND EGGS OF THE CHEER PHEASANT

High up among the tumbled mountains a slight depression is scratched among the ferns and spruce needles. It is usually close to the trunk of a tree, or beneath the protecting fronds of a deodar branch, and here the eggs are laid. The little dull-coloured hen sits closely, for the eyes of crows and monkeys are sharp and her plumage is much less conspicuous against the grass than the eggs.



NEST AND EGGS OF THE CHEER PHEASANT

to have been brought to Europe first in the year 1857, and the very following year it laid eggs and reared its young in the London Zoological Gardens. In 1863 it was observed that this bird bred much less freely than the species of *Gennaeus*, and failed utterly to give promise of reproducing regularly in confinement, so as to be of use in rearing for shooting in coverts and preserves. In 1876, when a large consignment of pheasants was received from India, this species far outnumbered the others, more than a score being included, and since then it is seldom that the species cannot be obtained from dealers, either wild birds trapped by the hill tribes, and which find their way to the Calcutta and Bombay markets or, more rarely, birds reared in captivity, chiefly in France and Germany.

Of seventeen individuals of which records have been kept in the London Zoological Gardens, the average duration of life was a little over two years and a half, while one hardy individual had a lease of life in captivity of six years and seven months.

DETAILED DESCRIPTION

Adult Male.—Forehead dark brown, widely margined with grey. Crown with less grey, and a narrow elongated crest springing from the occiput, wholly dark brown with paler grey tips to the feathers. Lower border of bare facial area dark brown, paling slightly on the ear-coverts. Under eyelid covered densely with white feathers, surrounded by a border of black ones.

Nape slaty blue; hind neck greyish white, with a dark cross-bar, and a shaft-spot on the concealed portion of the feathers. On the lower neck and mantle the cross-bars increase in number to three or four, the two distal ones visible, and the one nearest the tip acquiring a metallic-green sheen. The terminal fringe is white, but the background changes to a pale buff. This is the type pattern of the entire body plumage. All the feathers of the lower neck, mantle, scapulars, inner wing-coverts, back and rump show the metallic-green subterminal border. On the wing-coverts, however, the second black bar becomes changed into two L-shaped markings, facing the shaft, while posteriorly the feather becomes mottled with buff, grey and dark brown, the only distinct black lines being longitudinal.

The inner secondaries have a background of mottled grey and buff, with four or five cross-bars of pale buff, each bordered with black. On the outer secondaries and primaries these bars become solid buff, and very wide and pronounced on the outer web, coalescing along the margin. From the mid-back at the edge of the mantle back to the rump, the feathers are bright golden rufous, with well-developed subterminal band of green, and a few irregular concealed black spots. The fringe of these feathers is quite disintegrated, and of a shining golden rufous. The upper tail-coverts resemble the central rectrices. These latter are quite long and tapering, of a pale buff ground-colour, with about eight wide cross-bars of dark brown, quite densely mottled or vermiculated with grey. On the lateral feathers the background becomes a warmer buff, and the grey mottling is replaced by solid dark chestnut, so extremely developed on the inner web that the black is reduced to a mere anterior and posterior border.

The chin, throat and chest are greyish white, indistinctly and concealedly barred on the upper breast, the two anterior bars coming into full view, however, on the remaining ventral plumage. The breast and sides remain quite white, the fringe being disintegrated and silvery white, but the central lower breast and belly change to pale buff, and along the central line rather suddenly to brownish black, the buff being reduced to a pair or two of marginal spots. The lower sides, flanks and under tail-coverts are bright rufous, the black reduced to a spot in the former, and entirely absent in the latter. Thus the rufous of the back and rump are continued clear around the extreme posterior end of the body.

Mandibles pale yellowish horn colour; iris quite reddish in some individuals, yellowish brown in others; legs and feet pale lead-colour, fleshy tinge on the posterior positions. Bare facial area scarlet at the breeding season, paler, more pinkish at other times. Weight from 2 lbs. 10 ozs. to almost 4 lbs. Length, 960 mm.; extent, 760; bill from nostril, 26; wing, 259; tail, 560; tarsus, 73; middle toe and claw, 69. The spurs are stout and straight, and measure about 13 mm. in length. Wilson says that the length of an adult cock may reach 1160 mm. in length, but this is most exceptional, and I have never seen one over a maximum length of 1000 mm.

Adult Female.—Forehead, and a wide border all around bare facial area, whitish, with narrow brown shaft-streaks. Crown and a short occipital crest brownish black, with narrow buff margins. Under eyelid white, bordered with brown featherlets. Chin and throat pure white. Breast, sides and hind neck creamy white, with a large shaft-streak, which basally is split by a whitish shaft-spot. On the mantle the ground-colour has changed to warm chestnut, and so increased that the black is reduced to several spots or successive bars. Very characteristic of the entire upper plumage is the shining white rhachis, which from the hinder mantle posteriorly becomes a shaft-stripe, distally divided into a spot on the back, and merging with the broad, buffy-white tips of the wing-coverts. The shaft-stripe splits the subterminal black marking into two rather symmetrical ocelli.

On the hinder mantle the rufous gives place to a mottled grey, the former colour persisting only on the concealed portions of the feathers. The back and rump plumage varies greatly from a dark, mottled brown, with several irregular alternate black and buff cross-bars, to a cold, clouded grey with a conspicuous, black-bordered shaft-streak.

The secondaries and primaries are dark brown, strongly barred with rufous on the inner, and buffy white on the outer webs, the bars being mottled on the secondaries, but solid on the primaries.

The central rectrices present a series of cross-bands, so arranged that it is difficult to say what is the ground-colour. A narrow black cross-bar is followed posteriorly by a wide, clear bar of buffy white. Then large black blotches appear, and quickly become a fine mottling, while the buff changes into a greyish rufous. This in turn is abruptly stopped by the next black bar, and so on.

The colour zones of the ventral surface are very distinct. The white chin and throat give place abruptly to the brownish black of the breast with its wide greyish-white fringe. Although most of the breast plumage is rufous basally, this is quite concealed until, abruptly on the lower breast, the black disappears and the entire remaining ventral plumage shows as rich rufous, with a wide pale buff margin.

On the sides the black persists as irregular blotches, and on the posterior sides and thighs it increases as two black bars.

Mandibles pale brownish horn, sometimes more or less yellow; facial skin increasingly crimson as the breeding season approaches; iris reddish brown; legs and feet pale lead colour. Weight, 2 lbs. to 2 lbs. 10 ozs. Length, 660 mm.; extent of wings, 680; bill from nostril, 24; wing, 230; tail, 383; tarsus, 63; middle toe and claw, 61. Spurs, low blunt scalules.

Chick in Down.—A very young Cheer chick shows quite distinct colour zones separating head and body. The centre of the crown, widening posteriorly and ending on the nape, is dark chocolate or mahogany. Obliquely downward from the posterior corner of the eye, a sharp, narrow, jet-black line extends to the ear-coverts, where it expands, and then, narrowing again, continues back down the side of the neck. Elsewhere the head above is rich creamy buff, paling on the lower face. Abruptly at the lower neck the body-down becomes a grizzled grey, with dark chocolate on shoulder-spots, anterior half of the wing, and entire centre of the back. This latter area is trisected by two lateral lines of pale grey, reaching back almost to the tail-down, which in turn has a warm buffy tinge.

The buff of the face pales to a creamy white on the chin and throat, the remainder of the under parts being more of a greyish white. The chick measures: length, 100 mm.; bill from nostril, 6; wing, 30; tarsus, 21; middle toe and claw, 18.

Juvenile Plumage.—Lores, broad superciliary and large sub-ocular patch, chin, throat, and side neck pure white. Crown dark brown, bordered on occiput with buff, the feathers being normal in shape with as yet no hint of a crest. Mantle, scapulars, upper back and tertiaries rufous or greyish buff with a very wide, prominent, tapering, white shaft-stripe, the distal half of this being bordered with black. Wing-coverts without the rufous tinge, with a very narrow shaft-stripe and broad terminal margin of white, and a stain of rust-colour just basal to the latter. Secondaries a finely mottled brownish; background of the primaries clear blackish brown, all of the flight-feathers with pale buff cross-bars, chiefly on the outer web, very narrow on the secondaries, and much wider on the primaries. Lower back and rump of disintegrated, patternless feathers. Tail mottled like the secondaries, with rather indistinct bars. Lower parts, beginning abruptly at the neck, sandy buff with a wide, white shaft-stripe. On the sides the buff deepens and the stripe widens until the general appearance approximates that of the mantle. On the lower breast and belly the buff disappears, posteriorly giving place altogether to pure white. Bill from nostril, 11 mm.; wing, 131; tarsus, 48; middle toe and claw, 37.

First Year Plumage, Male.—The young birds, after their moult from the juvenile dress, appear in general like the adults, but they are considerably smaller, and on close examination differ in a number of characters. They have considerably less chestnut in the tail-feathers, less visible black on the ventral plumage, and much more yellow buff on those parts, in this respect resembling the female. On the upper surface we find much less metallic green, often confined to the central part of the mantle.

This green appears first not on the sub-terminal black band, but in irregular spots and lines on the terminal bluish-white mantle fringe.

A most interesting character present in every male of this age which I have examined is found upon all the dorsal feathers, from the nuchal plumage to the longest wing-coverts. This is a conspicuous, terminal, central spot of shining golden rufous. The spurs at this age are short, but sharp. Bill from nostril, 25 mm.; wing, 238; tail, 385; tarsus, 66; middle toe and claw, 58.

EARLY HISTORY

The Cheer pheasant was first brought to the attention of science by Major-General Hardwicke in the Transactions of the London Linnaean Society for 1827, five years after he described the male blood pheasant. Besides the actual description of the bird, he appends a few facts which are of interest as showing the sum total of our knowledge of the bird at that time, and, indeed, for many years afterwards. "The local name of this bird is the Cheer. It is a native of the Almorah hills, on the north-eastern boundary of Hindostan, and is about the size of the impeyan pheasant of Latham. It is remarkably bold, and fights with great vigour on the least irritation, at the same time raising its feathers and prating with a noise which resembles the word *Tuckraa, Tuckraa,* several times repeated. . . . This bird bears the Bengal climate very well, and with little care and trouble might be brought alive to England."

Hardwicke very naturally placed his newly-described pheasant in the all-inclusive Linnaean genus *Phasianus*, and in this he was followed by many writers until recently, when most authorities have realized that a separate genus is well deserved.

SYNONYMY

Phasianus wallichii Hardwicke, Tr. Linn. Soc. XV. 1827, p. 166 [Almorah Hill]; Hodgson, in Gray's Zool. Misc. 1844, p. 85; id. Icon. ined. in Brit. Mus., Gall. pl. 12 bis, nos. 76–78; Gray, List of Birds, pt. III. Gall. 1844, p. 24; id. Gen. B., III. 1845, p. 497; id. Cat. Hodgs., ed. I. 1846, p. 124; Hutton, J. As. Soc. Beng. XVII. pt. 2 1848, p. 695; Blyth, Cat. Mus. As. Soc. 1849, p. 245; Adams, Proc. Zool. Soc. 1858, p. 499 [W. Himalayas]; Mitchell, Proc. Zool. Soc. 1858, p. 545, pl. 147, fig. 1, and pl. 149, fig. 4; Irby, Ibis, 1861, p. 235 [Kumaon]; Jerdon, Birds India, III. 1863, p. 527; Sclater, List of Phas. 1863, p. 5; Gray, List Gallinae Brit. Mus. 1867, p. 28; Adams, Wanderings of Naturalist in India, 1867, p. 91; Tytler, Ibis, 1868, p. 203 [Simla to Mussooree]; Beavan, Ibis, 1868, p. 380 [Simla]; Sclater, Proc. Zool. Soc. 1869, p. 628; Gray, Hand-list Birds, II. 1870, p. 258; Elliot, Monogr. Phas., II., 1872, pl. X. [text]; Hume, N. & E. Ind. B. 1873, p. 524; Sclater, Proc. Zool. Soc. 1876, p. 464; Marshall, B. Nests India 1877, p. 59; Hume and Marsh, Game-birds India, I. 1878, p. 169, pl.; Scully, Str. F., VIII. 1879, p. 345 [Nepal]; Sclater, Proc. Zool. Soc. 1879, p. 115; Garrod, Proc. Zool. Soc. 1879, p. 364; Marshall, Ibis, 1884, p. 423 [Chamba]; Stolzmann, Proc. Zool. Soc. 1885, p. 431; Stewart, Zoologist (3), X. 1886, p. 440; Oates, ed. Hume's Nests and Eggs, III. 1890, p. 412; Evans, Ibis, 1891, p. 76; Günther, Proc. Zool. Soc. 1904, p. 130; Mitchell, Proc. Zool. Soc. 1911, p. 421.

Lophophorus wallichii Lesson, Man. d'Orn., II. 1828, p. 179; Griffith, ed. Cuv., III. 1829, p. 15; Vigne, Proc. Zool. Soc. 1841, p. 6 [Chamba].

Phasianus staceii Vigors, Phil. Mag. 1831, p. 232; id. Proc. Zool. Soc. 1831, p. 35.

Catreus wallichii Gould, Cent. B. Himal. 1832, pl. 68 [text]; Sclater, Proc. Zool. Soc. 1859, p. 205; Gould, B. Asia, VII. 1865, pl. 18; Saint-Hilare, Bull. Soc. d'Acclim., VII. 1870, p. 134; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 317; Grant, Hand-book Game-birds, I. 1897, p. 1; Blanford, Fauna Brit. India, Birds, IV. 1898, p. 82; Oates, Game-birds India, I. 1898, p. 293; Sharpe, Hand-list Genera and Species Birds, I. 1899, p. 37; Nehrkorn, Kat. der Eiersammlung, 1899, p. 193; Oates, Cat. Eggs Brit. Mus., I. 1901, p. 56; Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 58; Finn, Avicultural Mag. (3), I. 1910, p. 129; Finn, Game-birds India and Asia, 1911, p. 51; Heinroth, Jour. für Orn. 1911, p. 355; Baker, Jour. Bombay Nat. His. Soc., XXVI. 1918, p. 1.

PHASIANUS

TRUE PHEASANTS

PHASIANUS

TRUE PHEASANTS

Family PHASIANIDAE

Subfamily PHASIANINAE

Genus *PHASIANUS*

This is the group of so-called True Pheasants, the group which includes the bird known almost everywhere as the Common or English Pheasant. Some of the members of this genus are among the most familiar of the birds comprised in this monograph, while others we know only from a single individual, purchased in a market in some isolated Turkestan village and deposited in a far-distant Russian museum.

Their habits are much alike, although they are widely distributed, and in voice, modes of life, courtship, eggs and development of plumage there is very little difference between *colchicus*, which ranges the Caucasus along the eastern shores of the Black Sea, and *versicolor*, the sound of whose challenge mingles with the boom of the Pacific breakers, pounding on the Japanese coast, fifty-five hundred miles to the eastward.

In order to treat the group clearly I have drawn a sharp line of demarcation between *Phasianus* as they exist in their real zone of distribution, and the forms which have been crossed indiscriminately and acclimatized in all parts of the world.

At least thirty-five forms of these pheasants have been described, and ranked and re-ranked according to the personal bias of various authors. Some give to each a binomial name and full specific rank; at the other extreme we find *colchicus* called a species, and all the rest subspecies or geographical races of this. Until the vast wilderness stretching from the Caucasus eastward through Turkestan, Mongolia, Central China and Manchuria is zoologically better known, we can only sum up our present knowledge and place our construction on the members of the group accordingly.

In the evolution of these birds it appears that mutation has played little part, and most of the forms actually grade into one another, and in their extremes are separated only by slight differences of colour and pattern. This last is true even of the Formosan bird, but that of Japan has departed more widely from the general type of mainland pheasant. There is a good deal of individual variation, especially in the more widely distributed forms, as those of Eastern China, and this necessitates the changing of the species status in this genus.

The form of the birds is much the same in all, and the sexes are very unlike. The chief characters of the males are brilliant metallic colouring, coppers, greens and purples, a bare, red facial area, feathery ear-tufts rising from the sides of the crown, a long, tapering tail, and the lower back and rump with disintegrated fringes of such length that these parts appear hairy, without cohesive webs. Spurs are present. The females are dull in hue, various browns and buffs, marked with darker tints. There are eighteen tail-feathers, so graduated that the inner pair is usually three or even four times the length of the outer ones. The 1st primary is about equal to the 8th and considerably longer than the 10th.

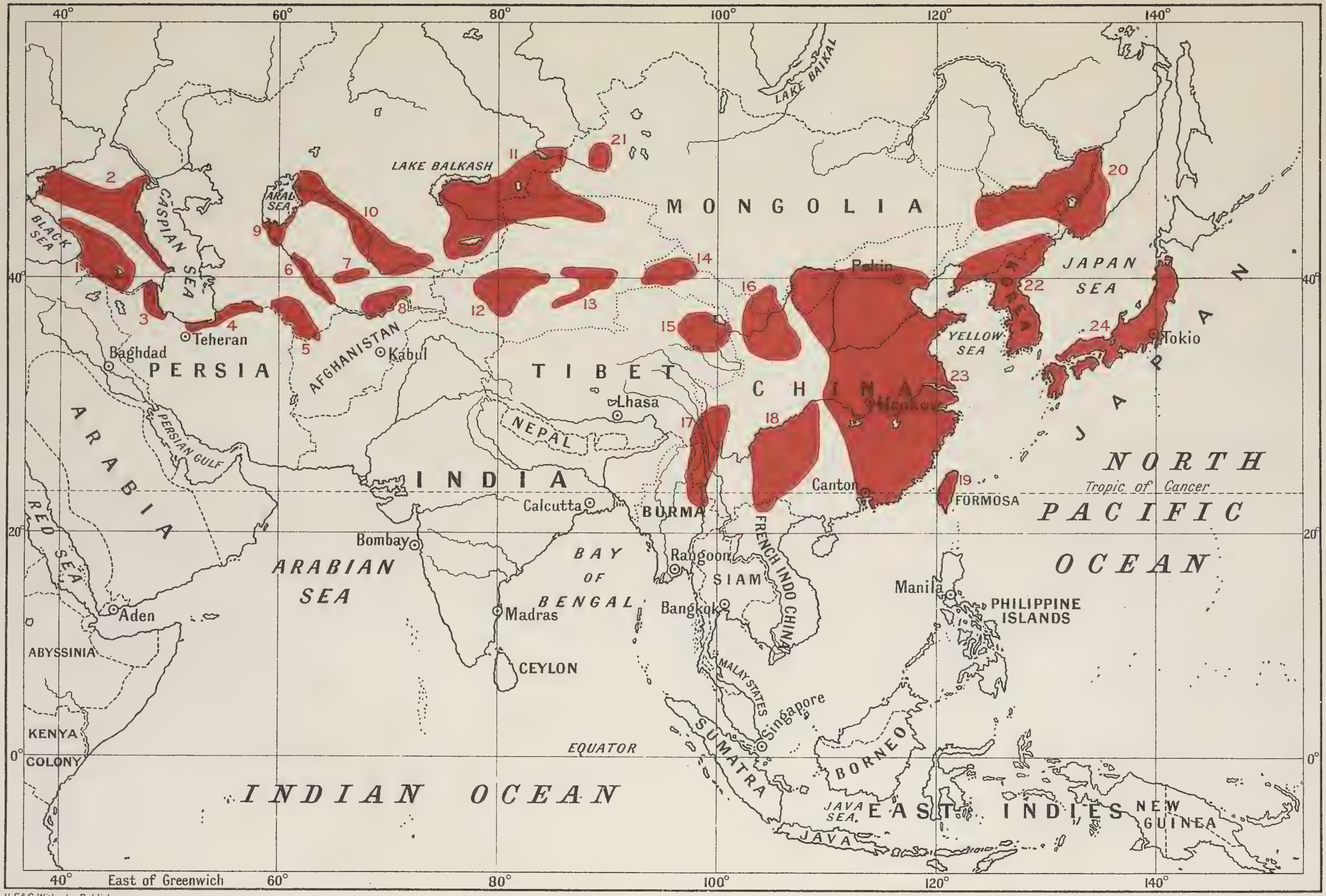
The genus has usually been considered to include more than the typical birds I have described. Indeed, Linnaeus made it equal almost to the entire family. Authors have gradually shorn it, first of one, then another, well-marked group.

Consistently applying my criterion of genera—that of geographic non-overlapping—I have removed the genera *Syrmaticus* and *Calophasis*, including the Reeves, Copper, Elliot and Bar-tailed birds, from *Phasianus*, and thereby cleared the situation of the difficult condition of several species of the same genus found in the same locality. As I have said elsewhere, this is not put forth as any widespread, fundamental law, but, like my subfamily classification by tail moult, it appears to apply logically to the group of birds under consideration.

Phasianus is thus left as an exceedingly homogeneous group, with the loose-fringed, hair-like feathers of the lower back and rump as an important distinguishing character. Correlated with this simplicity of structure we find a wider distribution than exists in any other phasianine genus.

I have devoted much time to the plan of classification of this genus, and have successively put myself in the frame of mind of the "lumper" and the "splitter" of taxonomic forms. Besides careful comparison of the numerous types of *Phasianus* in my own and museum collections, and study of their environment, distribution and barriers, the facts resulting from two very different lines of experience have done much in compelling my ultimate decision. First, the results of a single day's shooting in various parts of China, often resulting in the securing of several birds from a single covey. Out of four brace of pheasants thus killed on the middle Yangtse, well within a region of ring-necked birds, were individuals with a broad white neck ring, a narrow interrupted ring, and a third showing a few irregular white feathers on the right side. The coloration of the wing-coverts was correlated with the ring or ringless condition, being much whiter in the first-mentioned case. A variation in rump colouring in another bird would have been of full subspecific value if it had been killed in an isolated region, unassociated with its fellows. These birds were fully adult and in freshly moulted plumage. Yet within the space of two rice-fields of moderate size, and in a single morning, I had shot three recognizable forms or "subspecies," and two undescribed ones. Many correspondents have told of similar experiences.

The second array of facts is derived from the conditions found among semi-wild hybrids introduced into foreign countries. One example, out of many, must suffice. At Tring, England, Lord Rothschild turned down pheasants for shooting with varying amounts of *colchicus*, *torquatus*, and even *versicolor* blood. Later a strain of *pallasi* blood was introduced, and from this *mélange de sang* there arose pheasants which were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LAKE BALKASH
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Baghdad
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AFGHANISTAN
Kabul
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CHINA
Hankow
NEPAL
ARABIA
PERSIAN GULF
INDIA
Calcutta
BURMA
Canton
FORMOSA
NORTH
Tropic of Cancer
PACIFIC
OCEAN
RED SEA
Bombay
ARABIAN SEA
BAY OF BENGAL
Madras
Rangoon
SIAM
FRENCH INDO CHINA
Bangkok
Manila
PHILIPPINE ISLANDS
Aden
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CEYLON
MALAY STATES
Singapore
KENYA COLONY
EQUATOR
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Stanford's Geographical Establishment.

MAP SHOWING THE DISTRIBUTION OF THE TRUE PHEASANTS.

Region
1. Phasianus colchicus colchicus
2. ,, ,, septentrionalis
3. ,, ,, talischensis
4. ,, ,, persicus
5. ,, ,, principalis
6. ,, ,, zarudnyi

Region
7. Phasianus colchicus zerafshanicus
8. ,, ,, bianchii
9. ,, ,, chrysomelas
10. ,, ,, turcestanicus
11. ,, ,, mongolicus
12. ,, ,, shawi

Region
13. Phasianus colchicus tarimensis
14. ,, ,, satscheuensis
15. ,, ,, vlangalii
16. ,, ,, strauchi
17. ,, ,, elegans
18. ,, ,, decollatus

Region
19. Phasianus colchicus formosanus
20. ,, ,, pallasi
21. ,, ,, hagenbecki
22. ,, ,, karpowi
23. ,, ,, torquatus
24. ,, versicolor

absolutely indistinguishable from the wild form known as *satscheuensis*. Now *colchicus* hails originally from the region between the Black and the Caspian Seas; *torquatus* is a native of extreme south-eastern China, *versicolor* inhabits Japan, and *pallasi* dwells in northern and central Manchuria. From these extreme east, west and northern types the farthest removed, living in the very heart of Central China is *satcheuensis*. Q.E.D.

After taking into consideration scores of facts like those I have detailed, I have, without hesitation, arrived at the conclusion already suggested by Lord Rothschild, and in still greater detail by Dr. Ernst Hartert ("Novitates Zoologicae," XXIV, 1917, p. 449). This is to accept the name bestowed by Linnaeus, *Phasianus colchicus*, and to consider every one of the continental forms of *Phasianus* as subspecies of a single species. I even include the bird of Formosa, owing to the fact of its variability, as I have seen individuals taken on that island which differed very appreciably from one another. *P. versicolor*, in Japan, without question stands the test of a good species, both on account of its radical difference in pattern and colour, and because of its remarkable lack of individual variation.

I could very easily add a dozen new names to the thirty odd which have been proposed. It would seem, indeed, more logical to call these forms variations or geographic races, while in some cases they are most certainly nothing more than hybrids. But in the interest of simplicity and uniformity I see no need of indicating them as other than subspecies. The most important thing in a case such as this, is to realize that the name *colchicus colchicus*, as applied to the most western Caspian bird, indicates only the adoption of the priority term given by Linnaeus, and means nothing whatsoever in regard to ancestry or typical characters. *P. colchicus hagenbecki*, of doubtful distribution, deep in the heart of northern Mongolia, may just as well represent the original centre of evolution of the genus, while *colchicus elegans*, far south within Burmese boundaries, may, for aught we know, most nearly typify ancestral colouring and pattern. A given name, like the disappearance of the sun beneath the horizon, may result in an absolutely false habit of thought.

The distribution of the wild members of this group extends quite across the continent of Asia at its widest part, from the Sea of Azof and the Black Sea on the west, to the shores of the Japan Sea, almost five thousand miles distant. In Manchuria pheasants reach at least as far as 48° N. Lat., while three or four forms extend southward across the Tropic of Cancer.

Throughout much of this area the birds have spread into every available valley or along the mountain slopes, sweeping through passes and adapting themselves to semi-arid deserts. They are at home among the bleak boulders and bitter winds of Mongolia and Turkestan, the temperate uplands of Burma, and the flat rice-fields of Eastern China.

In some districts they are very rare, a single pair of birds seeming to have whole mountain-sides to themselves, while in the Yangtse valley five hundred pheasants may sometimes be seen in the course of a day's ride. They are essentially gregarious, and prefer to feed and roost in company. The broken crow of the cock pheasant is common to every continent, and whether ringing out among the bamboos of Yunnan, the oaks of English uplands, or the maple groves of American countrysides—it is identical and unmistakable.

The flight is weaker than in many other pheasants, and slower than the great Reeves. Pheasants feed on a host of vegetable and animal substances, grain and insects forming the two chief staples. They roost by preference on the ground, but occasionally an excess of terrestrial dangers compels them to take to trees.

The difference in coloration between the sexes is pronounced, the female being adapted for concealment while incubating, although the cock knows well how to hide himself in even a small tuft of grass. Courtship is lateral and persistent, but the birds have short tempers, and rough tactics sometimes supplant continued effort at display. The cocks may fight fiercely, but are not as pugnacious as some other forms.

The eggs are the smallest of all the pheasants, and vary from pear-shape to a rather broad oval, with a smooth and glossy surface, which is quite unmarked. Usually they are olive brown, but they vary from greenish white and pale stone colour to brownish cream or greenish blue. They measure 41 to 47 mm. in length, and 33 to 36 in width.

The chicks are pale buff, with black lines high over the eye, and two on the crown, filled in with dark seal brown, forming an arrow mark or long triangle, the tip ending at the base of the beak. The nape usually has several irregular markings, and two dark lines which meet on the hind neck, extending thence as a single, broad, blackish-brown band down to the rump. There is a small triangular ear-spot, and a dark line down in front of the wing; a large seal-brown dorsal wing, or shoulder-spot, and an L-shaped mark back of the wings, paralleling the dorsal mid-band. The tail down is pale chestnut, and the under parts are pale buffy white. The young birds acquire the adult dress before the first winter.

Next to the domestic fowl, descendants of the red junglefowl, the birds of this genus are of the greatest importance to mankind. They are notable as surpassingly beautiful inmates of aviaries, as affording the best of sport to hunters all over the world, as invaluable agents in preserving the balance of nature in replacing indigenous game-birds, and finally as articles of food, both fresh and conveyed, frozen in cold storage, to the most distant parts of the earth.

PHASIANUS

	Type
Phasianus, Linné. Syst. Nat., I. 1766, p. 270	*P. colchicus*

The forms of *Phasianus* which I recognize are as follows: the asterisk indicating those represented by coloured plates.

Phasianus * *colchicus colchicus* Linné.
colchicus septentrionalis Lorenz.
colchicus talischensis Lorenz.
colchicus persicus Sewertzow.
* *colchicus principalis* Sclater.
colchicus zarudnyi Buturlin.
colchicus zerafshanicus Tarnovski.
colchicus bianchii Buturlin.
colchicus chrysomelas Sewertzow.
colchicus turcestanicus Lorenz.
* *colchicus mongolicus* Brandt.
colchicus shawi Elliot.
* *colchicus tarimensis* Pleske.
colchicus satscheuensis Pleske.
colchicus vlangalii Przewalski.
* *colchicus strauchi* Przewalski.
colchicus elegans Elliot.
* *colchicus decollatus* Swinhoe.

Phasianus * *colchicus formosanus* Elliot.
* *colchicus pallasi* Rothschild.
* *colchicus hagenbecki* Rothschild.
colchicus karpowi Buturlin.
* *colchicus torquatus* Gmelin.
* *versicolor* Vieillot.

KEY TO THE ADULT MALES OF *PHASIANUS*

(Adapted from Buturlin, Ibis, 1904, pp. 378–385)

- I. Under parts not wholly metallic green . . . . *Phasianus colchicus.*
  - a Lower back, rump, and upper tail-coverts of a bronze-red, maroon, or rusty-orange general colour, sometimes glossed with oily green; black bars on the tail generally narrow.
    - *a'* Wing-coverts sandy brown or sandy rufous.
      - *a''* Margins of the feathers of rump and upper tail-coverts coppery maroon; chest feathers margined with black.
        - a^3 Middle of breast and sides of belly dark purplish green; centre of belly and under tail-coverts darker, blackish brown; chest and breast-feathers broadly tipped with black.
          - a^4 General colour darker, more intense coppery red; black markings of mantle, chest and flanks glossed with greenish blue or purple, as the sides of neck . . . . *colchicus.*
          - b^4 General colour paler, more golden orange; black markings of mantle, chest and flanks glossed with green; sides of neck with hardly any purple-blue gloss . . . . . . *septentrionalis.*
        - b^3 Middle of breast and sides of belly purplish red-bronze; centre of belly and under tail-coverts lighter, more rusty brown; black margins of chest- and breast-feathers narrow and glossed with dark blue . . . . *talischensis.*
      - *b''* Margins of the feathers of rump and upper tail-coverts green and buff; chest-feathers not margined with black . . . . *tarimensis.*
    - *b'* Wing-coverts white, yellowish white, or silver grey.
      - *c''* Middle of breast and sides of belly dark green; centre of belly brownish black.
        - c^3 Throat coppery maroon; a white collar.
          - c^4 White collar, wide and complete or nearly complete in front; maroon colour of the throat divided from the cheeks by a streak of bluish green; crown, nape, and hind-neck with prevailing green gloss; forehead, sides of neck, and tips of throat-feathers with prevailing greenish-blue gloss; chest and mantle with prevailing bluish and purple gloss; middle of breast green; black markings of flanks purplish and greenish blue . . . . *turcestanicus.*
          - d^4 White collar narrower and more interrupted in front; only the very tips of the maroon feathers bordering the cheeks below with light greenish; prevailing metallic gloss is purple and bronze on the crown, nape and hind-neck, dark yellowish green on forehead, bronzy green on sides of neck and on tips of throat-feathers, as also on chest, mantle and middle of breast; black markings of flanks glossed with green . . *mongolicus.*
        - d^3 Throat dark green; no white collar or only slight traces of it.
          - e^4 Flank feathers narrowly tipped, those of the chest, breast and upper back very narrowly edged with black, having a purplish-green gloss; rump-feathers with a subterminal spot of green on each side of the shaft; black tail-bars much broader, wing-coverts somewhat yellowish . . . . *shawi.*
          - f^4 Flank-feathers broadly tipped, those of the chest, breast and upper back very broadly edged with black, having a rich green gloss; rump feathers with a triangular green spot at the end of the shafts; black tail-bars much narrower; wing-coverts clearer white.

a^5 Chest and breast considerably lighter, as the coppery-red subterminal part of the feathers is wider and the dark green margins are much narrower . . . . . . *chrysomelas.*

b^5 Chest and breast considerably darker, as the coppery-red subterminal part of the feathers is narrower and the dark green margins are much broader . . . . . . *bianchii.*

d'' Middle of breast and sides of belly purplish coppery red.

e^3 Chest and upper breast-feathers with narrow blackish-blue edges; centre of belly darker brownish; more dark coppery red . . *persicus.*

f^3 Only on the sides of chest and breast are the feathers more or less edged with black; centre of belly light chestnut red; rump more golden or orange red.

g^4 White collar incomplete in front and extremely narrow, but quite recognisable; chest- and breast-feathers very narrowly (about $\frac{1}{16}$-inch broad) tipped with somewhat light purplish red bronze and often with a narrow blackish-blue apical shaft-streak; scapulars with little of a blackish-blue apical spot, but without or nearly without black margins; flanks spotted with black and purplish blue . . . . . . *zerafshanicus.*

h^4 Collar extremely narrow and broadly interrupted in front and behind; chest- and breast-feathers widely (about $\frac{1}{8}$-inch broad) tipped with somewhat dark purplish-red bronze with faint greenish gloss, and on the sides of these parts margined with blackish green; scapulars tipped with blackish-green spots, but with no or hardly any black margins; flanks spotted with blackish green . . . . *zarudnyi.*

i^4 Collar absent or only some white spots, as traces of it, visible; chest- and breast-feathers widely (about $\frac{1}{8}$-inch broad) tipped with somewhat light purplish-red bronze, without greenish gloss and black apical shaft-streaks; scapulars margined and widely tipped with blackish blue . . . . *principalis.*

b Lower back, rump and upper tail-coverts of a light and more or less dead lavender-blue, greenish- or yellowish-grey, or olive-greenish colour; a rusty orange patch on each side of the rump; black tail-bars generally broad.

c' No white collar or only slight traces of it.

e'' Dark green of the neck extending to the middle of chest and breast.

j^3 Flanks golden buff; mantle bright sandy red; scapulars bright sandy red or light brownish maroon with lighter edges, but not freckled with whitish or blackish in the centres . . . *vlangalii.*

k^3 Flanks coppery maroon; mantle maroon, scapulars bright maroon with paler tips and black and buff centres . . . . *elegans.*

f'' Dark green of the neck banded in front by the golden yellow, fiery or coppery red of the chest.

l^3 Chest- and breast-feathers broadly margined with black, this black having a dark green gloss; middle of breast and sides of belly slightly glossed with purplish green; flanks buff . . . *decollatus.*

m^3 Chest- and breast-feathers narrowly margined with black; flanks darker . . . . *strauchi.*

d'' White collar present, but narrow, and completely or nearly interrupted in front.

g'' Chest- and breast-feathers broadly margined with blackish green; general colour very pale.

n^3 Scapulars margined with sandy brown; general colour of mantle and flanks yellowish buff; chest glossed with pink; rump mostly grey; superciliaries completely or nearly wanting . *satscheuensis.*

o^3 Scapulars margined with red maroon; general colour of mantle and flanks very pale primrose; chest slightly glossed with pink; rump more greenish; white superciliaries better marked . . *formosanus.*

h'' Chest- and breast-feathers not margined or very narrowly margined with blackish blue; general colour bright . . . . . . *torquatus.*

e' White collar complete and very broad, even in front.

i'' Black patch under the ear with a white spot; superciliaries white, broad and nearly meeting in front; general colour of mantle and flanks very pale; scapular margins maroon; chest-feathers with narrow, if any, blackish-blue margins; front and sides of the neck more purplish blue than green . . . . *pallasi.*

j'' Black patch under the ear with no white spot.

  p^3 General colour exceedingly pale; mantle and flanks straw yellow; scapular margins rufous buff; crown more yellowish olive; superciliaries snow white and very broad; front and sides of the neck more greenish; wing-coverts bluish grey; rump more mottled . . . . *hagenbecki.*

  q^3 General colour very dark; mantle and flanks intense golden orange; scapular margins dark maroon or chocolate rufous; crown more rusty brown, superciliaries narrower and partly chestnut-stained; front and sides of neck more purplish blue; wing-coverts sandy or creamy grey; rump not much mottled . *karpowi.*

II. Under parts wholly metallic green . . . . *Phasianus versicolor.*

CAUCASIAN PHEASANT

Phasianus colchicus

THIS pheasant has been separated into three more or less distinct subspecific forms, *septentrionalis*, *colchicus* and *talischensis*. All of these inhabit the Caucasian region between the Black and Caspian Seas, extending into Russia on the north as far as Astrakhan, and into northern Persia on the south. One or more of these were the original components of the so-called common or English pheasant, and when in one of these hybrids an excess of *colchicus* blood has restricted or entirely supplanted the white *torquatus* collar, and the bird in general resembles the present form, it is usually called the Black-necked Pheasant.

NAMES.—Generic: *Phasianus*, Greek, φασιανός, a pheasant, the Phasian bird, from Phasis, Φᾶσις, a river in Colchis, near the mouth of which these birds are said to have been numerous. Specific: *colchicus*, from the region Colchis, now Mingrelia, in western Trans-Caucasia. English: Caucasian or Black-necked Pheasant. French: Faisan de Colchide. German: Jagdfasan.

BRIEF DESCRIPTION.—MALE: Centre of the crown bronze green; rest of the head dark green; neck purple; mantle, breast and flanks coppery orange, margined narrowly on the upper plumage and more broadly on the lower with black, glossed with purple, green blue or violet; upper back and scapulars basally with concentric lines of black and buff, widely fringed with purplish lake; lower back, rump and upper tail-coverts red maroon, glossed with purplish lake; wing-coverts sandy brown; mid-breast and sides of abdomen dark purplish green; mid-abdomen dark brown mixed with rufous; tail-feathers olive down the centre, with narrow, wide-set black bars, and widely fringed on each margin with rufous, glossed with purplish lake. Female: General colour sandy brown barred with black; back and sides of neck pinkish with metallic purple or green margins; mantle, sides of breast and flanks chestnut with black centres and pinkish-grey margins; an elongate patch of white, black-tipped feathers below the eyes; tail reddish brown down the middle, shading laterally into sandy olive, with wide irregular bars of black and buff.

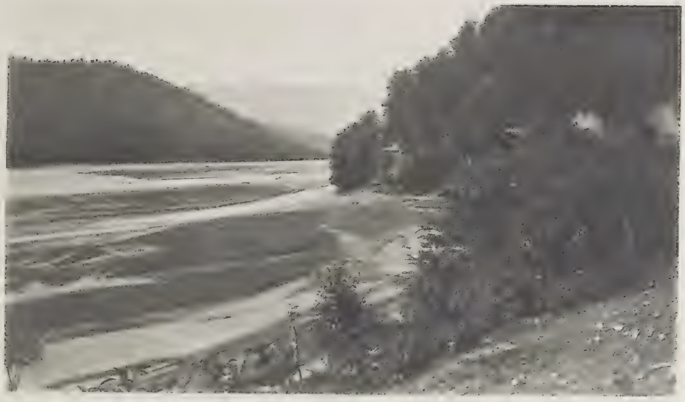
GEOGRAPHICAL DISTRIBUTION

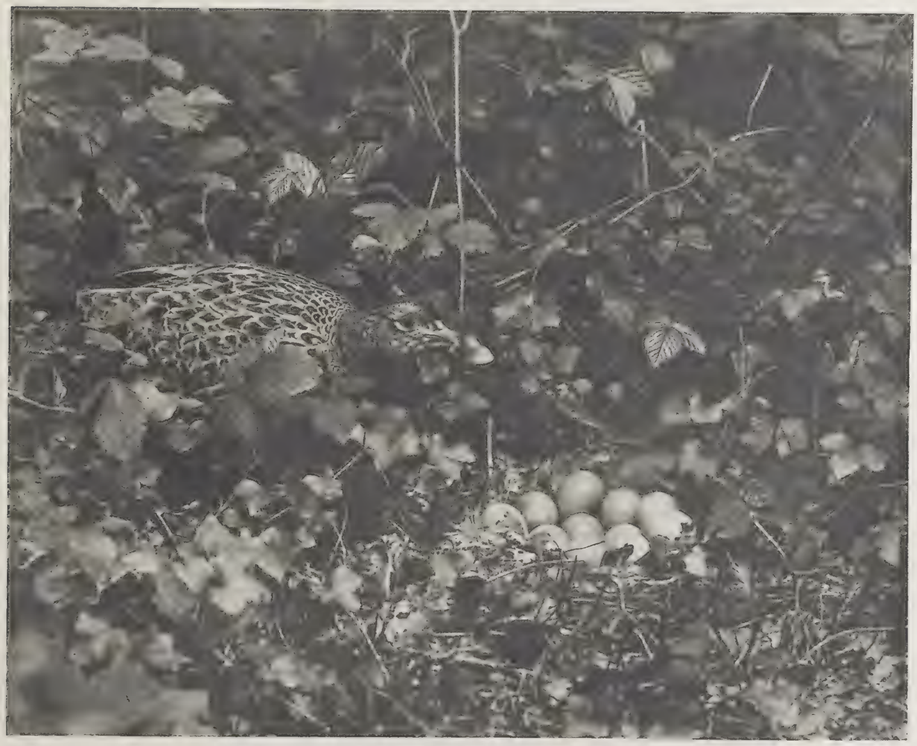
Considering for a moment the Caucasian forms of *colchicus* as a single group, Dr. Radde has presented us with the most exact information. In the entire Caucasus it is only rarely that these pheasants are found at an altitude higher than twenty-five hundred feet. A number of exceptions have been noted, especially in regard to the breeding haunts, as it is the rule for these birds to leave the steppes in the spring and to ascend the mountains during the warm season of the year. The general rule regarding elevation is confirmed by the fact that the western limit of distribution, on the plains of Suram, is at a mean elevation of twenty-two hundred feet. Above the ravine of Borshon at Azkur and Achalzick, pheasants have never been seen. The neighbourhood of Nuchas and Schemacha, the plains bounded by the Alasan and the Kura, and many other places at corresponding elevations, mark the upper limits of distribution of this bird. In the lowlands of Lienkora the range of the pheasants is decided rather by the

ORIGINAL HOME OF THE ENGLISH PHEASANT, LOWER VALLEY OF THE SAFED RUD, BETWEEN THE CASPIAN AND THE BLACK SEAS

This particular spot is inhabited by the Talisch Caucasian Pheasant, *Phasianus colchicus talischensis* Lorenz, one of the three closely related forms living in the region between these two great inland seas. It was from this area that the Romans brought the first birds to Britain. The land is not fertile and is broken up by rivers, small during the seasons of dryness, but swelling into great torrents in the rains. The people are little changed from the times of old when the waves of emigrants swept first in one direction, then in another, and left this hinterland of Asia, the northernmost edge of Persia, wild and semi-civilized.

Here the pheasants still lay their eggs and rear their broods, just as their transported fellows do in the coverts of England and America.





VALLEY OF THE SAFED RUD, BETWEEN THE CASPIAN AND THE BLACK SEAS.
ORIGINAL HOME OF THE BLACK-NECKED OR ENGLISH PHEASANT.

occurrence of dense deciduous forests, into which they never penetrate, than by the rather slight changes in altitude.

The same holds true of the Rion district, the real native home of the bird, and to which it owes its name. Here in natural clearings where the undergrowth is composed of dense thickets of smilax and clematis the pheasant finds a congenial home. The unbroken forests, which are not confined to the mountain slopes, are avoided. In lower reaches of the Terek, Sulak and Kuban Rivers, as well as along the littoral zone of the Caspian Sea, the pheasant becomes a dweller among reeds. Under similar conditions it still lingers in the lower half of Astrakhan, and has formerly been taken several times to the north of the city itself.

The pheasant does not ascend any of the more elevated longitudinal valleys, most of which are blocked by steep limestone hills, and even the upper Rion valley, with many suitable places less than twenty-four hundred feet elevation, is wholly deserted by these birds. In the southerly cross-valleys of the great Caucasus the bird is rare above Gori in the Liachwa Plains, but abundant in the lower part of the Ksanka. A half-century ago it was fairly common on the Suram Plains, in the vicinity of the many swift-flowing brooks, but since then it has been completely exterminated. The same holds true for the Rion and Quirila districts above Kutais. Formerly they were so abundant in the Scharopan region that they were killed by the natives with sticks; now they have vanished. In the valley of the Aragwa they occur on the estate of Prince Muchrausky, where they are strictly protected; along the lower Jaral they do not quite extend to the plains of Tionet; they follow the course of the Alsanan almost to its origin at the Narrow Ravine. The Tiflis bazaar-pheasants come chiefly from Kacheten and Elizabethpol. Down the Kura they are found wherever jungle-like vegetation and Tartar gardens thrive near water, but they prefer the islets in the river.

In ascending the mountains, going from Achsu to Schemacha, pheasants are constantly encountered associated with red-legged partridges. These heights are partly covered with brushwood, partly under cultivation and support a luxuriant flora. To the south the land has been cleared, and this, together with the water in the adjoining valleys, affords a very favourable home for the pheasants.

In the Araxes Valley they are first encountered eastward of the gap in the Karabagher Mountains. There is no record of them higher up than this. In these regions they avoid the arid steppes, the waterless stretches of desert and the dense forests. Their distribution on the west bank of the Caspian and in the Araxes Valley is sporadic, and where found they are found only at the edges of the sterile steppes, among the reeds in the proximity of the sluggish, half-stagnant streams.

While they occur in greater or less abundance in the lowlands of Talysch, and to the northward over Kumbaschinsk and the southerly border of Mugan, they are entirely absent toward the north in the bare, hot and partly waterless littoral zone of the Caspian shore. They are also absent from the vicinity of Baku and the peninsula of Apscheron. At Lenkoran the hunters have almost exterminated the birds, which are valued up to one ruble. In the vicinity of Kubas and Derbent the pheasant is abundant, and in the lowlands of the Sulak and the Terek, where again it is an inhabitant of extensive patches of reeds, it is common. On the island of Sari, south of Kysyl-agatsch-Busen, in the Caspian, pheasants were introduced many years ago by a Russian commander, and thrived well. Later they were almost shot off, then protection was accorded them and at present they are abundant again.

On the north side of the Great Caucasus, in the neighbourhood of the two chief river-beds, the Terek and the Kuban, pheasants are common in many places. The line from the Kuma to the sea forms the limit of northerly distribution; appearing first at the village of Obilnoe, close to Georgiewsk, it becomes common at Soldato-Alexandrowsk, and so on to the shore of the Caspian. Pallas, who knew the bird not only by the Russian name of Fasan, but also as Madsharski Petuch, that is, the Cock of Madshar, knew it from that locality. This place, on the left bank of the Kuma, is at present an insignificant settlement. In the time of the Empress Katharin, it was customary to send wine from this region to the court, and as this wine closely resembled Burgundy, the place was called Burgony-Madshari.

To the westward, pheasants are sporadically common in the lower basin of the Kuban and along the eastern shore of the Black Sea. On the preserves of the Grand-Duke Michail Nicolajewitsch the birds were protected for several years, until their excessive numbers became a constant source of destruction to the crops of grain. Farther south, along the coast, they become scarcer, and seem to be wholly absent from the littoral stretch extending from Adler to the district of Suchum. Pheasants have been reported from the Kuban delta and near Temrjuk.

GENERAL ACCOUNT

Although man is the pheasant's greatest enemy at present, yet there are few moments of the day or night when the birds are quite safe. Even in the darkness, so Radde tells us, when they are roosting in the thin-foliaged trees, the great Caucasian horned owl takes heavy toll of them. During feeding hours the black fox and the jackal stalk the birds among the grass or reeds, and in the air their two chief enemies are the peregrine falcon and the goshawk. The latter is the only bird used in falconry in Trans-Caucasia. When loosed these hawks rarely strike the pheasants while they are in flight, but pursue them until from fear they alight and hide. The goshawk then perches upon some adjacent bush or tree until the hunter comes up with his dog, which soon discovers the hidden bird. Should the pheasant be an old bird it will probably flush a second time, but young birds so dread the waiting bird of prey that they may often be caught in the hand. Sometimes a wild hawk will keep watch on the crouching pheasant and sail about overhead, screaming incessantly; a telltale for the hunter, who, with the aid of his pointer, flushes the bird and easily secures it.

The greatest feral enemy of the Caucasian Pheasant is the jungle-cat, which is found in every bit of uncut forest, and whose chief food indeed seems to be these birds. Guns, falconry and the jungle-cat have greatly reduced the number of pheasants, or actually exterminated them throughout large tracts of country. In Tiflis the market price of a brace of birds has already advanced to over two rubles (one dollar), whereas formerly they would have brought only twenty kopeks (ten cents). The systematic hunting in winter on the steppes of the mid-courses of the Terek and the Kuban will undoubtedly soon reduce the bird to the verge of extermination, especially as an unusually severe winter works terrible havoc among them. At Christmas time there regularly arrived, at Tiflis in former times, great German wagons laden down with pheasants and partridges secured by pot-hunters. These were sent northward to Russia by railroad. As many as eighteen eggs are known to have been deposited by a single wild hen pheasant, but in spite even of the usual large number laid, eight to twelve, there is no doubt but that the bird will become extinct throughout this entire region before many years have passed.

Of all berries the so-called Oblepicha of the Russians, which are of such importance in the native households, are the favourites of the pheasants. They also feed largely on blackberries and the allied *Rubus fruticosus* which grow in the jungle, but the chief article of diet seems to be the green sprouts and soft tips of grasses.

When suitable trees are available the pheasants roost high, the cock flying up first and the female following, the trees with the thickest foliage, and preferably those growing in a dense grove, being chosen. They are easily approached when roosting, but one's face must be hidden as one approaches. These pheasants are both monogamous and polygamous in a wild state, but the latter seems the more usual condition. Two or three hens are frequently seen associated with a single cock pheasant, the same ratio as obtains among the red-legged partridges.

At the pairing time the cock is exceedingly stupid. He can be deceived by a common barnyard hen, and can even be caught alive. The hunters of Lenkoran practice the following method: at the mating season in early May a domestic hen is taken out with the hunters, preferably to the edge of a woodland which contains challenging and pairing pheasants. To prevent the poor hen from seeing or attempting to escape, her eyelids are stitched together. She is then placed before a kind of blind, such as the great trunk of some fallen tree or a dense shrub behind which the man conceals himself. The frightened hen remains sitting until prodded with a stick, when she flaps her wings. The nearest pheasant cock hears this sound and at once approaches, uttering from time to time his sonorous di- or tri-syllabic crow. Again she is made to flutter, and soon the wild cock appears from the neighbouring brush within easy range. The alarm caused by the sound of the gun soon passes, and the experiment may be successfully repeated a short distance away. When, in the spring, the natives desert the lowland valleys for the elevated pastures of the mountains, the pheasants resort to the ash-heaps to enjoy dust baths. At such places wheat is scattered about as an added inducement in order to tempt them to come regularly and in numbers, and on a favourable opportunity a wholesale slaughter may be made with a single discharge of shot.

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Club, XXIX. 1911, p. 43; Detmers, Jour. für. Orn., 59, 1911, p. 499; Hammling, Jour. für. Orn., 59, 1911, p. 409; Finn, Game-birds India and As., 1911, p. 58; Bucknell, Ibis, 1911, p. 651; Hammond-Smith, Field, 117, 1911, p. 384; Grimshaw, Scot. Nat., 1912, p. 249; Karrig, Orn. Monats., 1912, p. 182; Zimmermann, Orn. Monats., 1912, p. 76; Witherby, Bull. Brit. Orn. Club, 1913, 31, p. 40 [Plumage variation]; Bucknell, Ibis, 1913, p. 13 [Introduction into Cyprus]; Thomas, Proc. Zool. Soc. London, 1915, p. 279, fig. 1 [Mendelism in white collar of hybrid with *C. torquatus*]; Lindquist, Faun. och Flora Uppsala, 12, 1917, pp. 87–8; Heumen, Ardea, Leiden, 7, 1918, pp. 19–59, 147–71 [Stomach contents]; College, Sci. Progr. London, 13, 1918, pp. 264–75 [Economics and preservation].

Common Pheasant Lath., Gen. Syn., II. pt. 2, 1783, p. 712; Lath., Gen. Hist., VIII. 1823, p. 187.

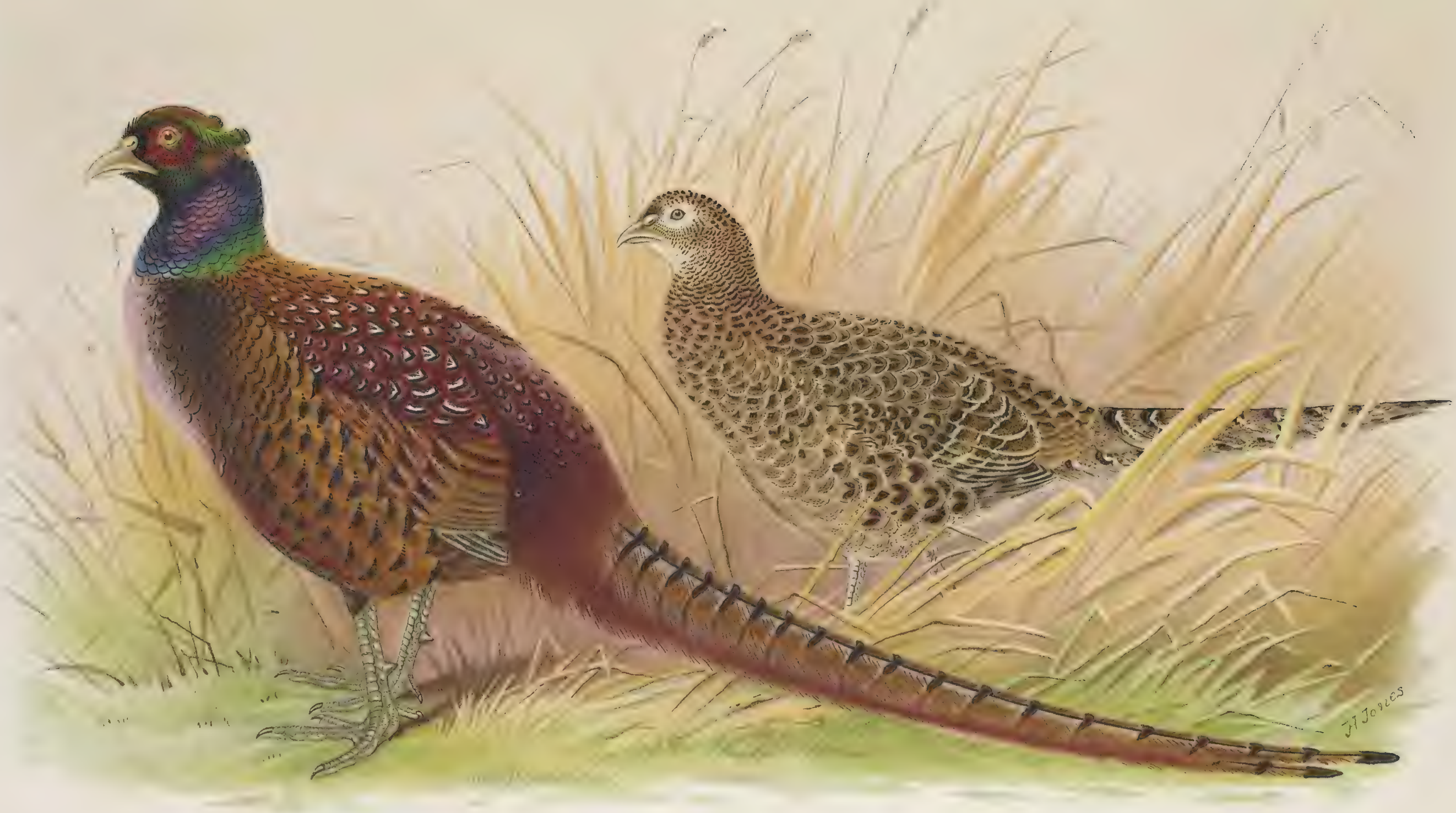
Phasianus marginatus Wolf and Meyer, Tasch. Deuts., I. 1810, p. 291, pl.

RION CAUCASIAN PHEASANT

Phasianus colchicus colchicus Linné

This pheasant, living between the Black and the Caspian Seas, is the type of its entire group, and probably the same bird which was brought by the Romans to England, known commonly as the English or Black-necked Pheasant. It has since been introduced into many parts of Europe, Asia and America, and thrives in almost any temperate climate. In many places it has satisfactorily replaced the indigenous game-birds, which have been driven out by advancing civilization.

PLATE L.



RION CAUCASIAN PHEASANT.

RION CAUCASIAN PHEASANT

Phasianus colchicus colchicus Linné

NAMES.—Subspecific: *colchicus*, from the region Colchis, now Mingrelia, in Western Transcaucasia. English: Rion Pheasant.

TYPE.—Locality: "in Africa, Asia." Describer: Linnaeus. Place of Description: Systema Naturae, 1758, p. 158. Present Location of Type: Unknown.

SUBSPECIFIC CHARACTERS.—The abdomen is blackish brown or dark chocolate, and a blue or violet gloss is dominant on the black markings of the mantle and breast; the bird on the whole is of a somewhat darker, more coppery red.

GEOGRAPHICAL DISTRIBUTION

TRANSCAUCASIA, including the basins of the Rion and the Chorokh Rivers and the south-eastern coast of the Black Sea, north to Sukhum-kale, just south of the main east and west chain of the Caucasus Mountains; the bases of the Kura and lower Araxes and their tributaries up to nearly three thousand feet above sea level. It touches the Caspian Sea at the Kizil-Agatch Gulf.

SYNONYMY

Phasianus colchicus Linnaeus, Systema Natura, 1758, p. 158 (Habitat in Africa, Asia); Linnaeus, Systema Natura, 1766, p. 271; Grant, Cat. Birds Brit. Mus. XXII. 1893, p. 320 (partim, *cum* subsp. *septentrionalis*); Grant, Hand-book Game-birds, 1897, Vol. II, p. 9 (partim, *cum* subsp. *septentrionalis*); Dresser, Manual Palae. Birds, II. 1903, p. 658 (partim, *cum* subsp. *septentrionalis*); Buturlin, Ibis, 1904, p. 385 (Western Transcaucasia).

Phasianus talischensis Grant, Cat. Birds Brit. Mus. XXII. 1893, p. 324 (Alazan River; partim, *cum P, talischensis*); Dresser, Manual Palae. Birds, II. 1903, p. 660 (partim).

Phasianus colchicus lorenzi Buturlin, Ibis, 1904, p. 386 (Central and Eastern Transcaucasia); Buturlin, Ibis, 1908, pp. 584, 586; Zarudny, Journ. für Orn. 59, 1911, p. 204 (N.W. Persia).

Phasianus colchicus colchicus Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p.37; Jourdain, Ibis. (9), VI. 1912, p. 327; Hartert, Nov. Zool. XXIV. 1917, p. 449.

NORTHERN CAUCASIAN PHEASANT

Phasianus colchicus septentrionalis Lorenz

NAMES.—Subspecific: *septentrionalis*, Latin, septentrionalis, northern. English: North Caucasian or Astrakhan Pheasant.

TYPE.—Locality: Kuban, Terek. Describer: Th. C. Lorenz. Place of Description: Journal für Ornithologie, 1888, p. 571.

SUBSPECIFIC CHARACTERS.—Male: Greenish gloss dominant on black markings of mantle and breast; general colouring paler, more of a golden red.

GEOGRAPHICAL DISTRIBUTION

THIS is the northernmost of the several *colchicus* forms. It inhabits the basins of the Kuma, Terek, Sulak and Kuban Rivers, ranging up to an elevation of two thousand to twenty-five hundred feet, and in the lowlands it extends to the northward along the western shore of the Caspian Sea to Astrakhan at the delta of the Volga, while on the south it reaches almost to the Apsheron Peninsula. In the central part of Northern Caucasia from Stavropol to Georgievsk it has been completely exterminated late in the nineteenth century.

SYNONYMY

Phasianus colchicus Pallas, Zoogr. II. 1811, p. 83; Lorenz, Beitr. Ornith. Nordseite Kankas. 1887, p. 56; Grant, Cat. Birds Brit. Mus. XXII. 1893, p. 320 (partim; cum *colchicus*); Grant, Hand-book Game-birds, Vol. II. 1897, p. 9 (partim; cum *colchicus*); Dresser, Man. Palae. Birds, II. 1903, p. 658 (partim; cum *colchicus*).

Phasianus colchicus L., subsp. *septentrionalis* Lorenz, Jour. für Orn. 1888, p. 571 (Kuban, Terek).

Phasianus colchicus septentrionalis Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Buturlin, Ibis, 1904, p. 385 (basins of Kuban, Terek and Kuma); Buturlin, Ibis, 1908, pp. 584, 586; Hartert, Nov. Zool. XXIV. 1917, p. 449.

TALISCH CAUCASIAN PHEASANT

Phasianus colchicus talischensis Lorenz

NAMES.—Subspecific: *talischensis*, after Talisch, the Russian district inhabited by this bird. English: Talisch Pheasant.

TYPE.—Locality: Talisch. Describer: Th. C. Lorenz. Place of Description: Journal für Ornithologie, 1888, p. 572.

SUBSPECIFIC CHARACTERS.—Middle of breast and sides of abdomen are purplish carmine, and chest and upper breast are narrowly margined with purple; breast feathers more pointed and their black margins narrower than in the other related forms.

GEOGRAPHICAL DISTRIBUTION

THIS is a bird of the lowlands of the south-western shore of the Caspian Sea. Its range includes the Russian district of Talisch and the Persian provinces of Ghilan and most of Mazanderan. On the north the Talisch Pheasant grades into *colchicus*, while in the south-eastern part of its range it comes very close to the Persian Pheasant (*persicus*). In its subspecific characters it approaches this latter pheasant, but is worthy of a definite place with the red-rumped Caucasian group on account of its consistently sandy-brown wing coverts.

Writing of Northern Persia, Buxton tells us that "this race of the pheasant is common both on the northern slopes of the Elburz and low down in the extremely marshy forest close to the Caspian. Ingoldby flushed the bird at Bandar-i-Gaz from small tufts of rice straw in wet paddy-fields in winter, and they are not rare in the dense reed-beds round the Resht lagoon country in which purple herons, gallinules and water rails seem more naturally at home. If one were to judge from the few specimens at Tring and the British Museum, and the three males at my disposal, one would conclude that the white ring so characteristic of some Eastern pheasants was represented solely by an occasional white-tipped feather in some males and not in others, but this is far from being the case. I have seen many scores of specimens in the bazaars of Resht and Enzeli, and a small proportion of them have very nearly complete white rings to their necks, but are in other respects typical *talyschensis*. The throats of these specimens had been cut almost to the point of decapitation, and I preserved no skins. Pheasants are sold for about one tolman, approximately eight shillings, a price sufficient to put every gunner's hand against them."

SYNONYMY

Phasianus colchicus Blanford, East. Persia, II. 1876, p. 272 (Resht, Mazanderan); Radde, Orn. Cauc. 1885, p. 289 (partim); Radde and Walt, Ornis, 1889, p. 90 (Talisch).

Phasianus persicus Suz., subsp. *talischensis* Lorenz, Jour. für Orn. 1888, p. 572 (Talisch).

Phasianus talischensis Grant, Cat. Birds Brit. Mus. XXII. 1893, p. 324 (partim; cum *Ph. lorenzi*); Grant, Hand-book Game-birds, 1897, Vol. II. p. 14; Dresser, Manual Palae. Birds, II. 1903, p. 660 (subsp. of *colchicus*); Buturlin, Ibis, 1908, pp. 585, 586; Witherby, Ibis, 1910, p. 516.

Phasianus persicus talyschensis Zarudny, Orn. Faun. Transcasp. 1896, p. 475 (Sari, Mazanderan).

Phasianus colchicus talischensis Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Buturlin, Ibis, 1904, p. 386; Hartert, Nov. Zool. XXIV. 1917, p. 449.

Phasianus talyschensis Zarudny, Jour. für Orn. 59, 1911, p. 204 (Southcaspian).

Phasianus colchicus talyschensis, Buxton, Jour. Bombay Nat. His. Soc. XXVII. 1921, p. 881.

PERSIAN PHEASANT

Phasianus colchicus persicus Sewertzow

NAMES.—Subspecific: *persicus*, Latin, persicus, Persian. English: Persian Pheasant.

TYPE.—Locality: Southern shore of Caspian Sea. Describer: Sewertzow. Place of Description: Bull. Soc. Nat. Mosc. XLVIII. 1874 (but published in 1875), p. 208.

SUBSPECIFIC CHARACTERS.—Male: Differs from the Caucasian Pheasants in having the lesser and median wing-coverts buffy white; the back, flanks and breast have a much stronger golden-yellow ground colour; the abdomen is edged with purplish red; the breast feathers are somewhat pointed, and deeply emarginate, while the black margin is very narrow, not wider than half a millimetre.

GEOGRAPHICAL DISTRIBUTION

NORTH-EASTERN Persia and South-western Transcaspia, including the valleys of the Atrek and Gurgen Rivers, and their tributaries, such as the Tchirin-tchai, Kizzl-kan, Sumbar, Chandyr, middle Atrek and Kara-su. It extends along the Caspian coast from the left bank of the lower Atrek to the Ashur-ada Island and Potemkin Peninsula. It probably does not quite meet *colchicus talischensis* in Mazanderan. To the south it is bounded by the Elburz Mountains; on the north the lower Atrek and the Kopet-dah Mountains form a natural boundary, and in the east it does not extend beyond Darah-gaz, Kalat-i-Nadir and the other mountains which form the watershed between the valleys of the Atrek and the Heri-rud.

GENERAL ACCOUNT

In geographical position, as well as in plumage characters, the Persian Pheasant is intermediate between the dark-winged, brownish-bellied Caucasian Pheasants and the white-winged, maroon-rufous-bellied birds of the *principalis* group. It overruns what well might be mountainous barriers to most avian species, and shows occasional hints of interbreeding.

The Tchirin-tchai and the Kizzl-kan are two northern tributaries of the Atrek along which the Persian Pheasant is found in numbers. The sources of these rivers lie in vast plains covered with reeds, which are inhabited by troops of wild boars and covies of pheasants. The parts of the country free of reeds have the appearance of steppes and are of the same general character as the slopes of the surrounding mountains. Here quantities of bustards are found. Along the banks of the rivers the vegetation forms a zone of dense growth. It is sometimes necessary to travel a considerable distance before being able to penetrate to the water. Here the berries of the junipers ripen in late July and early August, and furnish food not only for the pheasants, but for quantities of starlings and warblers. After leaving the plains the rivers occasionally flow through gorges, often exceedingly deep and narrow. Islands appear now and then covered with reeds, which form safe refuges for both wild boars and pheasants, the latter flying to the shore and feeding throughout the day, returning at night to roost among the reeds. In fact, of the pheasants found in the vicinity of these islands, almost all seem to have this habit. It would seem to be a necessary method of escape from the leopards, cheetahs, hyaenas and other dangers which in this almost treeless country would soon bring about the extermination of these birds were they compelled to roost upon the ground with no surrounding barrier of water to protect them. The Persian Pheasant is extremely local in its haunts, and while abundant along the course of one river, may be entirely absent from the adjacent ones, or from a parallel stream flowing through exactly similar territory, with otherwise corresponding fauna and flora.

SYNONYMY

Phasianus colchicus, var. Poelzam, Proc. Kasan Soc. Nat. I. 1870, p. 140 (*nec* Linnaeus 1758).

Phasianus persicus Sewertzow, Bull. Soc. Nat. Mosc. XLVIII. 1874, pt. 3 (published in 1875), p. 208 (southern shore of Caspian); Sewertzow, Jour. für Orn. 1875, p. 225; Sewertzow, Ibis, 1875, p. 494; Bogdanow, Consp. Av. Russ. I. 1884, p. 19 (Ashourada and Peninsula of Potemkine); Seebohm, Ibis, 1887, p. 170; Menzb., Ibis, 1887, p. 302 (Atrak, Sumbar and Chandir Rivers); Sharpe, Trans. Linn. Soc. (2) Zool. V. 1889, p. 86 (Bauder-i-ghaz); Radde and Walt., Ornis, 1889, pp. 89–96, 170, 180 (Transcaspia); Zarudny, Bull. Soc. Nat. Mosc., 1889, p. 812; Grant, Cat. Birds Brit. Mus. XXII. 1893, p. 324; Dresser, Birds Eur. Suppl. 1895–96, p. 317, col. pl.; Zarudny, Orn. Faun. Transcasp. 1896, p. 476; Grant, Hand-book Game-birds, Vol. II. 1897, p. 15; Dresser, Manual Palae. Birds, 1903, p. 661; Buturlin, Ibis, 1904, p. 387 (N.E. Persia and S.W. Transcaspia); Buturlin, Ibis, 1908, pp. 585, 587; Witherby, Ibis, 1910, p. 516; Zarudny, Jour. für Orn. 59, 1911, p. 204 (Choressen, Persia).

Phasianus shawi Elliot, Ibis, 1876, p. 132 (*nec* Elliot, 1870).

Phasianus komarowi Zarudny, Bull. Soc. Nat. Mosc. LXI. 1885, pp. 277, 322 (Tchirin-Tchai, Kizzl-kan).

Phasianus colchicus persicus Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool. XXIV. 1917, p. 449.

HOME OF THE PERSIAN PHEASANT IN SOUTHERN TRANSCASPIA

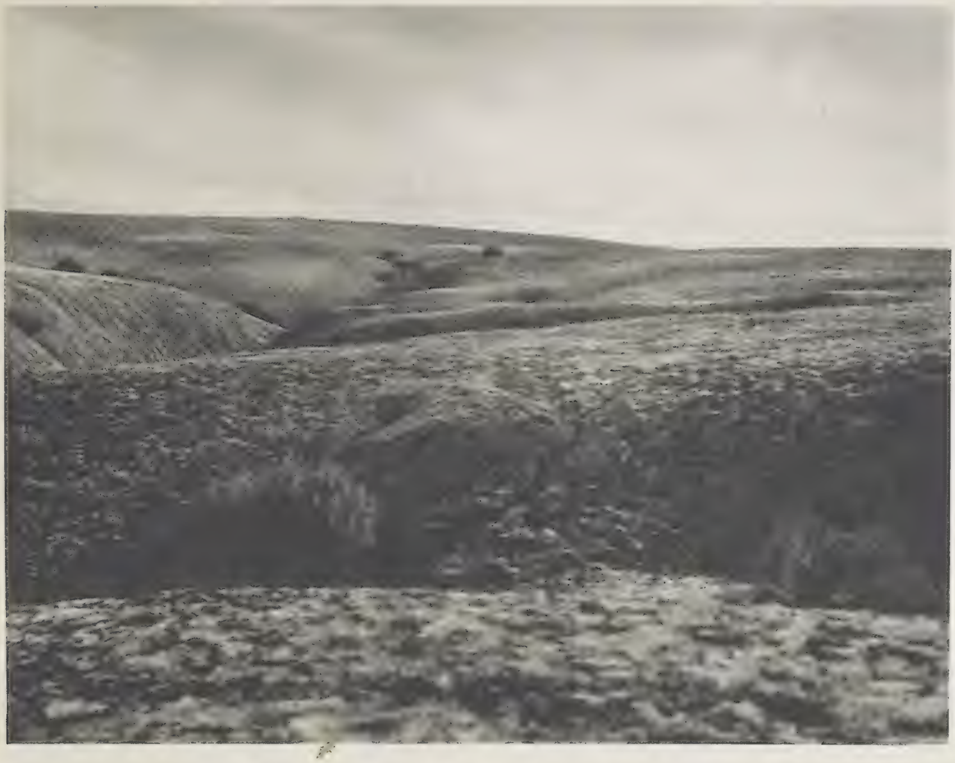
Phasianus colchicus persicus Severtz

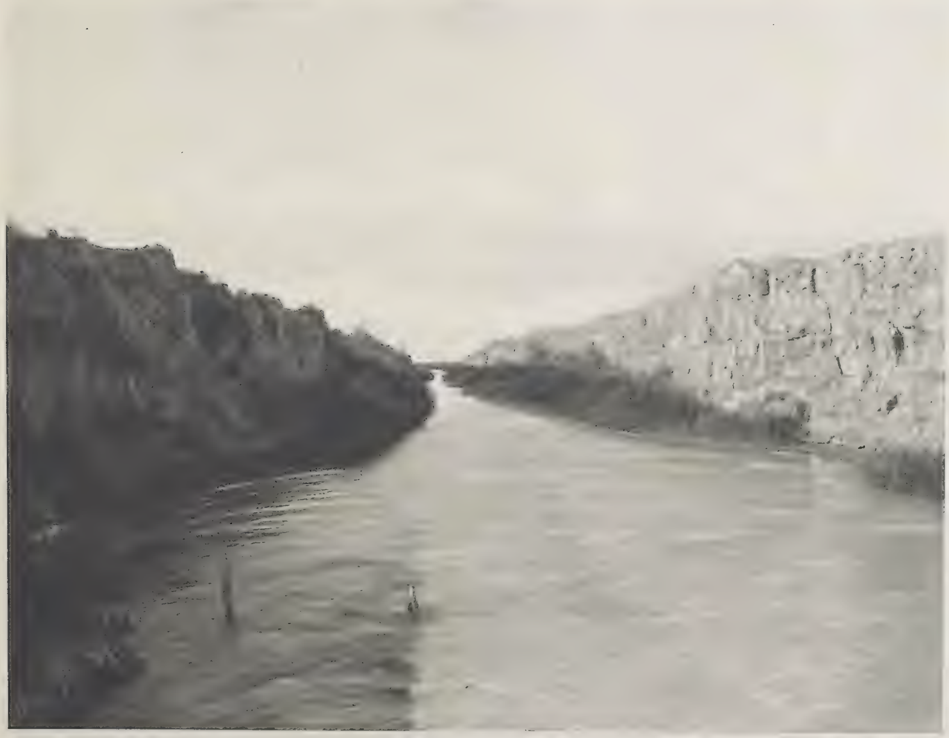
These birds live in vast plains either covered with reeds, or else b e, with the appearance of steppes, where also are found troops of wild boars, hyaenas and great bustards They feed on the juniper berries, and many fly at night for safety to the islands in the sluggish rivers avoid their enemies, the cheetahs and leopards.

HOME OF THE PRINCE OF WALES'S PHEASANT SOUTH TURKESTAN

Phasianus colchicus principalis Sclat

The Murghab River is muddy and turgid, of the colour of p coffee, flowing in a channel of brown clay, between high banks which are ever crumbling. In the pring the river becomes a terrible torrent, tearing through the desert with irresistible force, forcing all ng creatures far from their normal haunts along its banks. Here this pheasant makes its home.





HOME OF THE PERSIAN PHEASANT IN SOUTHERN TRANSCASPIA.
HOME OF THE PRINCE OF WALES'S PHEASANT, SOUTH TURKESTAN

PRINCE OF WALES'S PHEASANT

Phasianus colchicus principalis Sclater

NAMES.—English: Prince of Wales's, Murghab or Tejend Pheasant.

TYPE.—Locality: Bala-Murghab, Afghanistan. Describer: Dr. P. L. Sclater. Place of Description: Proc. Zool. Soc. London, 1885, p. 322. Present Location of Type: British Museum.

SUBSPECIFIC CHARACTERS.—Male: Has the white wing-coverts of *persicus*, but the rump is bronze red and the lower back, rump and upper tail-coverts usually lack the purple-lake gloss; the breast is broadly tipped with purplish-red bronze, and the flanks with dark green or purplish blue; the scapulars are widely margined with black. Female: In general much paler than the females of *c. colchicus* and *c. persicus*, the ground colour of the mantle paler rufous, and the general colour of the body very pale sandy buff. It is very close to the female of *chrysomelas*. The birds from the western part of the range have been separated by Bogdanow as *komarowi*, but on a wholly variable and unstable character: the greenish instead of a purplish gloss on the blackish tips of the flank feathers. The individuals upon which this name was based were obtained in 1883 by the Russian traveller Zarudny, who explored the Turcoman country while it was in the midst of political uprisings. His notes and skins were sent to Prof. Bogdanow, who published the description in 1886, a year after Dr. Sclater had named *principalis*.

GEOGRAPHICAL DISTRIBUTION

NORTH-EASTERN Persia, north-western Afghanistan and southern Turkestan, including the Merv Desert. It is found in the valley of the river known in Turkestan as the Tejend and in Afghanistan as the Heri Rud. It also ranges along the lesser streams which flow from the eastern slopes of the Darah-Gaz, Kalat-i-Nadir and other Persian Mountains to the plains of Tejend, such as the Dushak, Kaahka and Lutfabad. On the Heri-Rud it has been found as far as Kafir-Kala, but has been exterminated in Ahal-Teke, and to the west reaches only to Baba-Durmas, about seventy-five kilometres east of Askhabad. It occurs in the Russian and Afghan portions of the Murghab Valley, together with the oases of Mero, Zelotan and Pandj-deh.

It is bounded on the north by Repetek and the Kara-Kum sands, and on the west and south by the watershed of the Caspian and inland basins.

GENERAL ACCOUNT

The first specimens of this bird were obtained by members of the Afghan Delimitation Commission. They were the property of H.R.H. the Prince of Wales, and were named in 1885 by Dr. Sclater and exhibited by him at the London Zoological Society. Dr. J. E. T. Aitchison, the naturalist of the commission, writes as follows of this form: "The specimens of this pheasant were all got on the banks of the Bala-Morghab, where it occurs in considerable numbers in the tamarisk and grass jungle growing in the bed of the river. More than four hundred were killed on the march of thirty miles up this river. It not only wades through the water in trying to make from one point of vantage to another, but swims, and seems to be quite at home in these thickets, where there is always water to the depth of two or three feet. These swampy localities afford good shelter. In the mornings and evenings the pheasants leave it for the more open and dry country, where they pick up their food. I believe the same species is found on the Hari-rud river, but I have seen no specimens from that locality."

The Prince of Wales's Pheasant has been introduced successfully into England, where it has done well both in the Zoo and in shooting preserves. In Tegetmeier's "Pheasants," Colonel Sunderland tells of his experiences with this form. "I first tried the importation of eggs, but they proved a dismal and costly failure. In the autumn of 1902 I went to the East, and succeeded in securing several birds. No one could positively inform me whether this species of pheasant was polygamous or not, so I brought to England an equal number of cocks and hens. A useless precaution, for the cocks fought for the hens in the usual manner. The birds stood the long journey very well, and were turned down into large enclosures in Hampshire at the end of February, 1903. They did not begin to lay till the end of April, but laid very freely, those in one pen averaging over thirty eggs a hen. Virtually all the eggs proved fertile. They hatched extremely well, and the strong chicks proved fully as easy to rear as those from the ordinary pheasant. They were fed on custard and oatmeal, etc., as recommended by Tegetmeier. They were brought up in fields of standing corn and buckwheat, surrounded by wire fences ten feet high, and the farmyard hens employed as foster-mothers were at large in these fields. The birds were pinioned when five days old. I wanted them to be able to fly a little, and severed the wing joint with scissors, so as to leave them with two flight feathers. This has proved a costly blunder, for with only those two flight feathers the birds could fly over the ten feet of wire with the greatest ease. It was quite a business to catch them in October, when I moved into Sussex, and indeed I left several birds in the woods of Conholt Park. Before turning them down in Sussex I removed the two flight feathers from each bird, but despite all precautions, some of the birds still fly over the wire. In shooting my woods several were seen, and two were shot, being mistaken for ordinary wild birds, so well did they fly. Each pen consists of several acres of wood, pasture, and arable land, which will be sown with corn and buckwheat. Only five hens and one (unrelated) cock run to the acre, therefore this breed of pheasant should remain free from all civilized diseases. I may mention that I have noticed that the birds are extremely fond of the flower of the common charlock."

The Mero oasis is one of the most wonderful, if not the largest in Asia, and owes its richness to the Murghab River. This, instead of being "the fairest of all streams," as it is called in *Lalla Rookh*, is, so Curtis tells us, "a muddy turgid river, the colour of poor coffee, flowing in a channel of brown clay, between high banks which cave in every year during high water and always are likely to crumble. In the spring months, when the snow is melting in the mountains, the Murghab is a terrible torrent, tearing its way through the desert with irresistible force. In the fall of the year, exhausted by those exertions, emaciated by evaporation and the demands of the irrigation canals, it is a sullen, stagnant, unwholesome stream. The annual overflow usually covers the low places in the valley with water, which remains in stagnant ponds after the flood recedes, and slowly evaporates, leaving slimy acres of decaying vegetation to poison the air." It is among such surroundings that the Prince of Wales's Pheasant lives, and will

PLATE LI

PRINCE OF WALES'S PHEASANT

Phasianus colchicus principalis Sclater

THIS splendid bird lives in southern Turkestan in the great Merv Oasis. In north-western Afghanistan it has been found in tamarisk and grass jungle growing in the bed of the river. It wades and even swims in the water of these marshes, but feeds in the more open, dry country.

This form has been successfully introduced into England and elsewhere.

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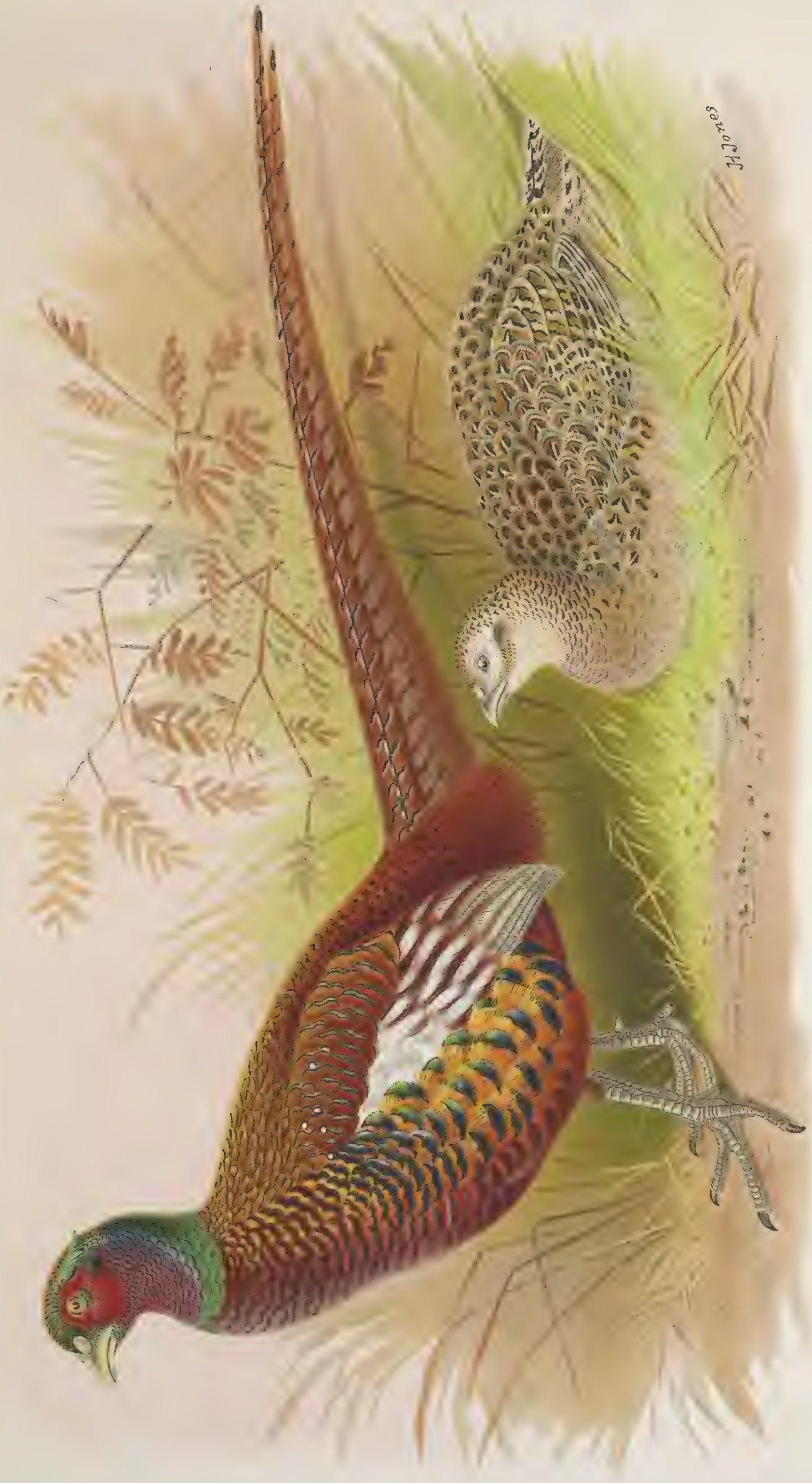
PLATE LI.



PRINCE OF WALES'S PHEASANT.

continue to live until exterminated by the constant inroads of cultivation of mankind.

Zarudny found these birds in large numbers on the islands of the rivers connected with the valley of the Atrek. The islands and the neighbouring banks are covered with a dense growth of reeds, or more rarely are barren, grassy steppes, and here the pheasants make their home in company with troops of wild boar, antelopes and bustards. The chief enemies of the pheasants are jackals, wild cats and occasionally cheetahs and leopards.

SYNONYMY

Phasianus principalis Sclater, Proc. Zool. Soc. London, 1885, p. 322, pl. XXII (Bala-Murghab, N.W. Afghanistan); Sclater, Proc. Zool. Soc. London, 1887, p. 502; Menzb., Ibis, 1887, p. 301 (Murghab, Tejend and Dushak Rivers and Kaakuk Dist.); Scully, M. and B. N. Afghan., 1887, p. 86; Seebohm, Ibis, 1887, p. 171; Sclater, Ibis, 1889, p. 584 (Upper Murghab); Zarudny, Bull. Soc. Nat. Mosc., 1889, p. 813; Sharpe, Trans. Linn. Soc. 1889, (2), Zool. V., p. 86, pl. vii.; Radde and Walt, Ornis, 1889, pp. 89, 90, 170, 180; Zarudny, Bull. Soc. Nat. Mosc., 1890, p. 309 (partim) (streams from Daragez and Kalat Mountains); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 325; Dresser, Birds, Eur. Suppl., 1895–96, p. 321, pl.; Zarudny, Orn. F. Transcap., 1896, p. 477; Grant Hand-book Game-birds, 1897, p. 16; Dresser, Manual Palae. Birds, II. 1903, p. 660; Tegetmeier, Bull. Brit. Orn. Club, 1903, XIV., p. 33 (in England); Zarudny, Mem. Geogr. gen. I., Russ. G. Soc., XXXVI. 1903, p. 76, (Heri-rud); Tegetmeier, Pheasants, 4th ed., 1904, p. 192, fig.; Buturlin, Ibis, 1904, p. 388 (Murghab basin and oases of Mero, Yelotan and Pandj-deh); St. Quinton, Field, 113, 1909, p. 131 (white on cock's neck); Finn, Avicultural Mag., 1910, I., p. 227; Beebe, Rec. Ind. Mus., Vol. 5, pt. iv., No. 27, p. 270; Pocock, Proc. Zool. Soc. London, 1911, Vol. II., p. 862 (experiments with insects); Zarudny, Journ. für Orn., 59, 1911, p. 204.

Phasianus komarowii Bogdanow, Bull. Acad, Sci. Peters., XXX. 1886, p. 356 (Askhabad); Bogdanow, Mél. Biol., XII. 1886, p. 319; Zarudny, Bull. Soc. Nat. Mosc., 1886, LXI., p. 322 (Tchirin-Ichai and Kizil-Kan tributaries of Atrek River).

Phasianus principalis komarowi Buturlin, Ibis, 1904, p. 388 (Tejend and Heri-Rud basins); Buturlin, Ibis, 1908, pp. 585, 587; Beebe, Rec. Ind. Mus., Vol. 5, pt. iv., No. 27, p. 270.

Phasianus principalis typicus Buturlin, Ibis, 1908, pp. 585, 587.

Phasianus colchicus principalis Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Millais, Nat. Hist. Brit. Game-birds, 1909, p. 105; Hartert, Novitates Zoologicae, XXIV. 1917, p. 449.

ZARUDNY'S PHEASANT

Phasianus colchicus zarudnyi Buturlin

NAMES.—Subspecific: *zarudnyi*, after Mr. Zarudny, a Russian traveller and collector. English: Zarudny's or Chardjui Pheasant.

TYPE.—Locality: "from Khiva to Chardjui." Describer: Zarudny under the preoccupied name of *medius*, which Buturlin changed to *zarudnyi*. Place of Description: Ornith. Fauna Transcasp., 1896, p. 481.

SUBSPECIFIC CHARACTERS.—The terminal black of the scapulars is very narrow, not broad as in *principalis*; a white collar may be present and almost complete, or represented by a few lateral traces, or wholly absent; the purple of the breast is darker, the flank tips greenish, and the feathers of the throat have greenish instead of purple edges. Three additional forms have been described, two of which, *gordius* and *tschardjuensis*, I heartily agree with Hartert, are to be considered as individual variations of *zarudnyi*, while the third *jabae*, may be similarly explained, or else considered as a hybrid or transition between *zarudnyi* and *bianchii*.

GEOGRAPHICAL DISTRIBUTION

THE valley of the middle course of the Amu-Daria or Oxus River. To the north it descends to the Petro-Alexandrovsk, there almost touching the southernmost range of *chrysomelas*, and to the south it has been taken at Karnas, not far from the Afghanistan border, and the eastern point of occurrence of *bianchii*.

GENERAL ACCOUNT

Of the habits of these pheasants nothing has been recorded, but Lord Curzon tells us that "the bed of the Amu-Daria—*i.e.* the depression which is covered in time of high water—is here between two and three miles wide, though in summer, when more swollen by the melted snows of Hindu Kush and the Pamir, the inundated surface sometimes extends five miles. In the autumn and winter, when the waters have shrunk, the channel is confined within its two banks and is then from half-a-mile to a mile in width, flowing with a rapid current of most irregular depth over a shifting and sandy bottom. Mud-banks, covered with ooze or sand, show where the current has only recently subsided. Still, however, did it merit the title 'the great Oxus stream—the yellow Oxus.' The colour of the water is very dirty, coffee-hued brown, the facsimile of that of the Nile, but it is extremely healthful and can be drunk with impunity. I was strongly reminded of the appearance of this great river by the formation of its bed, by the structure of its banks, and by the scenery and life which it displayed, of many a landscape on the Nile in upper Egypt. There is the same fringe of intensely fertile soil along its shores, with the same crouching clay-built villages, and even a Bokharan counterpart to the Sakkiyeh and shadoof for raising and distributing the life-giving waters of the stream. Only, on the Oxus there is no cliff like the eastern wall of the Nile at Gebel-el-Tayr, and alas, in this northern latitude there is no belt of coroneted palms."

SYNONYMY

Phasianus principalis Zarudny, Note on a New Variety of Pheasant, 1891, p. 2 (Daragan-Ata); Alphéraky and Bianchi, Ann. Mus. Zool. Acad. St. Petersb., XII. 1908, p. 440.

Phasianus medius Zarudny, Ornith. Fauna Transcasp., 1896, p. 481 (from Khiva to Chardjui); (nec Ph. medius, Milne-Edwards, Ois. foss. Fr. II. 1870, p. 242).

Phasianus principalis zarudnyi Buturlin, Ibis, 1904, p. 390 (Valley of the middle Amu-Daria); Buturlin, Ibis, 1908, pp. 585, 587.

Phasianus principalis bogdanowi Buturlin, Ibis, 1904, p. 390.

Phasianus gordius Alpheraky and Bianchi, Ann. Mus. Zool. Acad. St. Petersb., XII. "1907," p. 440; Buturlin, Ibis, 1908, p. 572; Loudon, Ornith. Jahr. Hallein, XXI. 1910, p. 45; Hartert, Nov. Zool., 1917, p. 450.

Phasianus tschardjuensis Buturlin, Ibis, 1908, p. 571; Loudon, Ornith. Jahr. Hallein, XXI. 1910, p. 45.

Phasianus michailovski Zarudny, Semja. Ochotn., 1909, p. 129; Loudon, Ornith. Jahr. Hallein, XXI. 1910, p. 45.

Phasianus jabae Zarudny, Semja. Ochotn., 1909, p. 128 (Amu-Daria); Loudon, Ornith. Jahr. Hallein, XXI. 1910, p. 45. (Translated description.)

Phasianus colchicus zarudnyi Hartert, Nov. Zool., XXIV. 1917, p. 450.

ZERAFSHAN PHEASANT

Phasianus colchicus zerafshanicus Tarnovski

Names.—Subspecific: *zerafshanicus*, after its habitat, the valley of Zerafshan. English: Zerafshan Pheasant.

Type.—Locality: Valley of Zerafshan. Describer: Tarnovski. Place of Description: The Field, LXXVII. 1891, p. 409.

Subspecific Characters.—This is the most eastern of the small group of rufous-bellied pheasants. It resembles *persicus* in the colour of its breast and *mongolicus* in the presence of a white collar. Both of these characters separate it from birds of the *principalis* group.

GEOGRAPHICAL DISTRIBUTION

The Valley of Zerafshan in Bokhara; the northern boundary separating it from *turcestanicus* is the watershed of the Zerafshan and the Syr-Daria rivers; on the south the Gissar Mountains separate it from *bianchii;* to the west *zarudnyi* nearly meets it as at times of high water the Zerafshan floods nearly to the Amu-Daria.

GENERAL ACCOUNT

The only information we have concerning this pheasant is given by its discoverer, Lieutenant Tarnovski. He says: "The Pheasant of the Zarafshan has a mode of life totally differing from its other Asiatic brethren, owing to the high state of cultivation of the Zarafshan Valley; it breeds and nests in reed-swamps and marshes bordering on this stream, and takes its food from the neighbouring fields and gardens. The best time for obtaining it is just before sunrise, when it may be found congregated in the reed-swamps mentioned above. Mr. Klossovski shot, in November 1890, a hen of this species in male plumage."

SYNONYMY

Phasianus zerafshanicus Tarnovski, The Field, LXXVII. 1891, p. 409; Grant, Cat. Birds Brit. Mus., XXII, 1893, p. 326; Grant, Hand-book Game-birds, Vol. II. 1897, p. 17; Sharpe, Hand-list Birds, Vol. I. 1899, p. 37; Buturlin, Ibis, 1904, p. 391; Carruthers, Ibis, 1910, p. 472, pl. VII.

Phasianus klossowskii Tarnovski, The Field, LXXVII. 1891, p. 409; Zarudny, Orn. Faun. Transcasp., 1896, p. 483.

Phasianus principalis, var. *Klossowskii* Zarudny, Note on a new subspecies of Pheasant, 1891, p. 1.

Phasianus tarnovskii Seebohm, Proc. Zool. Soc. London, 1892, p. 271.

Phasianus zarafshanicus Dresser, Manual Palae. Birds, 1903, p. 661 (subsp. of *Ph. persicus*).

Phasianus colchicus zerafshanicus Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool. XXIV. 1917, p. 450.

BIANCHI'S PHEASANT

Phasianus colchicus bianchii Buturlin

NAMES.—Subspecific: *bianchii*, after Dr. V. L. Bianchi, a Russian ornithologist. English: Bianchi's or Upper Oxus Pheasant.

TYPE.—Locality: Upper parts of Oxus Basin. Describer: Buturlin. Place of Description: Ibis, 1904, p. 393.

SUBSPECIFIC CHARACTERS.—Like *chrysomelas* but with black margins of breast feathers wider, the black dominating the coppery red on the visible parts of the feathers.

GEOGRAPHICAL DISTRIBUTION

VALLEY of the Upper Oxus. Messrs. Grum-Grzimailo met it during their travels in 1885 in the mountains of Bokhara, in the valleys of Kafirnagan (Dschidda-bach) and Wachsch (Kurgan-Tjube). On the north, east and south the range of this pheasant is bounded by ranges of high mountains, the Gissar, Alai, Pamir and Hindu Kush respectively. Its range along the Oxus downstream is not known, nor its exact relation with *zarudnyi*.

SYNONYMY

(?) *Phasianus chrysomelas* Bianchi, Zur Ornis der westlichen Auslaüfer des Pamir und des Alai, in Mél. biol. XII. 1886, p. 677 (Kafirnagan, Wachsch.); (?) Zarudny, Orn. Faun. Transcasp., 1896, p. 480 (? partim, Karki).

Phasianus chrysomelas bianchii Buturlin, Ibis, 1904, p. 393 (Upper Oxus); Buturlin, Ibis, 1908, p. 585, 589.

Phasianus colchicus bianchii Hartert, Nov. Zool. XXIV. 1917, p. 450.

KHIVAN PHEASANT

Phasianus colchicus chrysomelas Sewertzow

Names.—Subspecific: *chrysomelas*, *χρυσός*, gold, *μέλας*, black, golden black or dark yellow, referring to the bird's colour. English: Khivan or Northern Oxus or Aral Pheasant.

Type.—Locality: Amu-Daria. Describer: Sewertzow. Place of Description: Bull. Soc. Nat. Mosc., XLVIII. 1875 (dated 1874, but issued 1875), p. 207 (Amu-Daria).

Brief Description.—Male: Breast and upper back widely margined with black, so that on the visible portion the black equals the golden ground-colour; flank feathers simply emarginated and the end of the feathers occupied by a black spot; dark bars on basal half of middle tail-feathers narrow, 2 mm. or less. Female: Resembles the female of *shawi*, but is like *principalis* in having the black spots on the under plumage more strongly marked.

GEOGRAPHICAL DISTRIBUTION

The delta of the Oxus or Amu-Daria and the lower parts of its valley and the oasis of Khiva in the district of the same name. On the west its range is bordered by the Ust-Urt Plateau; on the south by the waterless desert of Kara-Kum. On the south-east from the town of Khiva southward it is replaced by *zarudnyi*, and along the shores of the Aral Sea to the north it meets somewhere the broad-collared *turcestanicus*.

SYNONYMY

Phasianus, nova sp. Bogdanow, Trans. Soc. Natur. St. Petersb., VI. 1875, p. LXXXVI. (Khiva).

Phasianus chrysomelas Sewertzow, Bull. Soc. Nat. Mosc., XLVIII. pt. iii, 1875 (dated 1874, but issued 1875) p. 207 (Amu-Daria); Sewertzow, Jour. für Orn., 1875, p. 225; Sewertzow, Ibis, 1875, p. 493 (Lower Amu-Daria); Gould, Birds Asia, VII. 1876, pl. XXXVI.; Bogdanow, Consp. Av. Ross., 1884, fasc. I. p. 20 (Amu-Daria); Seebohm, Ibis, 1887, p. 172; Pleske, Mem. Ac. St. Petersb., 1888 (7), XXXVI. No. 3, p. 48 (Kasalinsk); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 327; Zarudny, Orn. Faun. Transcasp., 1896, p. 479; Dresser, Manual Palae. Birds, II. 1903, p. 662; Sharpe, Hand-list Birds, 1899, Vol. I., p. 37; Dresser, Ibis, 1905, p. 152 (egg); Buturlin, Ibis, 1904, p. 392 (Delta of Amu-Daria, lower parts of its valley and oasis of Khiva).

Phasianus dorrandti Sewertzow, Jour. für Orn., 1875, p. 225.

Phasianus oxianus Sewertzow, Jour. für Orn., 1875, p. 225.

Phasianus insignis Elliot, Ibis, 1876, p. 132 (nec Elliot, 1870).

Phasianus colchicus chrysomelas Hartert, Nov. Zool., XXIV. 1917, p. 450; Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37.

Phasianus chrysomelas typicus Buturlin, Ibis, 1908, pp. 585, 589.

SYR-DARIA RING-NECKED PHEASANT

Phasianus colchicus turcestanicus Lorenz

NAMES.—Subspecific: *turcestanicus*, from Turkestan. English: Turkestan or Syr-Daria Pheasant.

TYPE.—Locality: Syr-Daria. Describer: Lorenz. Place of Description: Orn. Mon., 1896, p. 189.

SUBSPECIFIC CHARACTERS.—Male: White collar quite or nearly complete in front; mantle, chest and dark spots on flanks with bluish and violet gloss.

GEOGRAPHICAL DISTRIBUTION

RUSSIAN Turkestan, from the north-eastern shores of the Aral Sea, south-east along the valley of the Syr-Daria as far as Gulcha, a valley in the Alai Mountains, about 5,000 feet elevation, and 140 kilometres south of Osk.

The range of the Syr-Daria Pheasant is bordered by parts of the Tian-Shan and Alai Mountains on the south-east, and by the Alai and Gissar Mountains on the south. These chains of mountains separate it from *shawi*, *bianchii* and *zerafshanicus*. On the west the Kysil-Kum Desert divides it from *chrysomelas*, although their ranges appear to meet on the shore of the Aral. On the north-east the Karatan, Alexander and Terskentan Mountains form the limits of its range, and present more or less of a barrier between it and the closely allied *mongolicus*.

SYNONYMY

Phasianus colchicus Lichtenstein, Naturh. Anh. to Eversmann's Reisen Buchar, 1823, p. 133 (Kuwan-Darja, Ian-Darja), nec Linnaeus, 1758); Eversmann, Natural History of the Orenburg Country (Russ.), III. 1866, p. 350 (var. *torque colli alba*, Aral).

Phasianus mongolicus Sewertzow, Vertic. and Horizont. Dist. of Turkestan Animals (Russ.) in Trans. I. S.F.N.A.E., V., VIII. 1873, p. 68 (nec Brandt, 1844); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 328 (nec Brandt) (partim); Stolzmann, Bull. Soc. Nat. Mosc., I. 1897, p. 78 (nec Brandt); Dresser, Manual Palae. Birds, II. 1903, p. 665 (*cum mongolicus*).

Phasianus mongolicus turcestanicus Lorenz, Orn. Mon., 1896, p. 189 (Syr-Daria); Buturlin, Ibis, 1904, p. 396, (Russian Turkestan, along the valley of the Syr-Daria); Lonnberg, Arkiv. Zool., II. 1905, pp. 7–9; Buturlin, Ibis, 1908, pp. 585, 589.

Phasianus mongolicus bergii Zarudny, Mess. Ornith., V. 1916, p. 227.

Phasianus colchicus turcestanicus Hartert, Nov. Zool., XXIV. 1917, p. 451.

KIRGHIZ PHEASANT

Phasianus colchicus mongolicus Brandt

Names.—Subspecific: *mongolicus*, from Mongolia; a name given on the principle of *lucus a non lucendo* as the bird barely enters the extreme western part. English: Mongolian or Kirghiz Ring-necked Pheasant.

Type.—Locality: Altai. Describer: Brandt. Place of Description: Bull. Ac. Sc. St. Petersb., III. 1844 p. 51.

Subspecific Characters.—Male: Distinguished from all the red and maroon-rumped species already described except *turcestanicus* by a broad white ring around the neck, interrupted in front. In general it resembles the Persian Pheasant, but the mantle, chest and breast are bronzy orange-red, showing purple-carmine in one light and green in another; breast and flanks tipped with blackish green; centre of breast and sides of abdomen dark green. Female: Similar to the female of *chrysomelas* but with a black spot near the tip of each feather of the upper mantle, and a black bar across the middle instead of a broad, black, submarginal border. From *turcestanicus* it differs in the very distinct break in the forepart of the white collar, while the mantle, chest and dark spots of the flanks are glossed with green instead of blue or violet.

GEOGRAPHICAL DISTRIBUTION

The Kirghiz country in the north-eastern part of Russian Turkestan, in the province of Semiretshensk and part of Semipalatinsk. Also the Chinese Province of Kuldja including the basins of Lakes Issyk-kul, Balkash, Ala-kul and Zaisan together with their tributaries. To the East in the Tian-Shan, it reaches high altitudes along the valleys of Tekes and Kunges, tributaries of the Ili, and thence onward, throughout southern Dzungaria as far as Guchen.

GENERAL ACCOUNT

On the south-east the enormous Tian-Shan serve as the boundary between the Kirghiz Pheasant and both *shawi* and *tarimensis*, while on the south-west the Alexander and Karatan Mountains intervene to a less extent between it and *turcestanicus*. On the north-west the Altai Mountains form somewhat of a barrier between it and *hagenbecki*, a member of the eastern, grey-rumped group of pheasants.

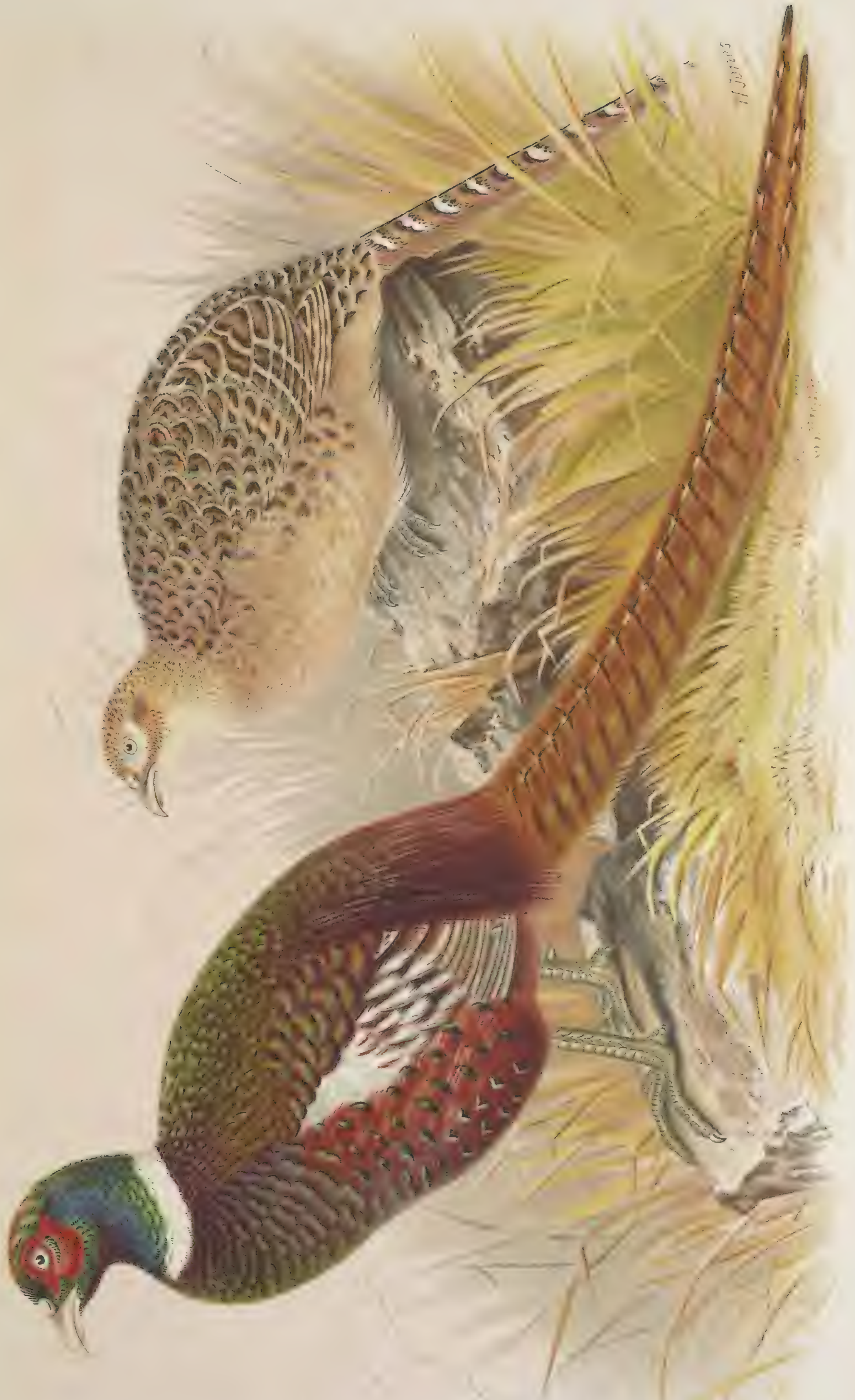
Mr. Douglas Carruthers ("The Field," Vol. CXX. No. 3112) gives a vivid account of Mongolian Pheasant shooting. Although he includes the Syr-Daria bird, yet his actual shooting experiences were in the very heart of typical Mongolian Pheasant country.

"The Mongolian pheasant, which is so well known in Europe on account of its introduction as a breeding agent, has 'the heart of Asia' as its abode and the Ili valley as the centre of its range. Westwards, it wanders as far as the Syr-Daria and the Aral Sea, and eastwards to the Black Irtish, under the great Altai; whilst the rivers of Dzungaria—the Borotala and the Manas—also support an immense stock of these birds. The range of the Mongolian pheasant is separated from that of the Zarafshan bird by a zone of barren desert. It is barriered by the giant Tian-Shan range from the haunts of the Tarim and Yarkand varieties, and the Altai Mountains separate it on

KIRGHIZ MONGOLIAN PHEASANT

Phasianus colchicus mongolicus Brandt

THESE splendid northern Ring-necks range over an amazing diversity of country in the heart of Asia. They are fast runners and high-flyers and afford magnificent sport on the steppes and sand dunes where they make their home. In the winter the Kirghiz practice falconry with enthusiasm, and their favourite sport is flying goshawks at pheasants.



KIRGHIZ MONGOLIAN PHEASANT.

the east from the Chinese pheasant (*P.c. torquatus*) and its variety (*hagenbecki*) of the Kobdo country.

"During a winter spent in Central Asia in company with my friend, Mr. J. H. Miller, we had many opportunities of seeing and shooting the true Mongolian pheasant in its natural haunts. Close to Kuldja—in the Ili valley—where we wintered, however, pheasants are not to be found in any considerable quantity. On the lower Ili, where immense reed beds give them the necessary cover, they exist, I believe, in great numbers; but without a knowledge of the country and good dogs the hunter would not do very well. It is in the upper valleys, such as the Tekes and Kash, where a narrow zone of thorn scrub and thickets lines the river-banks, that the best shooting is to be obtained.

"In its wild state the pheasant inhabits a great variety of country. I have shot them in Bokhara, on tamarisk-covered sand-dunes, where the birds had never seen a tree in the course of their whole existence. In other places they inhabit vast reed beds, half under water; again, in others they keep almost entirely to the cultivated oasis, and they swarm in the jungles, thickets and poplar forests which line the rivers at any altitude up to 4,000 feet.

"I set out one wintry morning, with a native servant and a spare horse laden with food, cartridges and blankets to ride up into the valley of the Kash, right affluent of the Ili. Now, if in this country the shooting is free, and there are no licences to be taken out or keepers to tip, yet, on the other hand, one has to work for the sport, and the payment will probably be a couple of days' hard riding in the cold to and from one's shooting ground and uncomfortable nights spent in dirty caravanserais.

"I rode 200 lis (or sixty-six miles) in the two short winter days, and at the dusk of the second day arrived on the south bank of the Kash river. Here, finding a Taranchi settler, I housed myself and my horses in his mud-built dwelling. In one tiny room my host and his girl wife, a baby, my servant and myself ate and slept. This, my shooting lodge for the time being, was isolated, but for two or three hovels near by, and, being far away from the villages of the middle Kash, and cut off by the swiftly flowing river from the Kirghiz and Kalmuck encampments on the northern side of the valley, was an ideal centre to shoot from. The Kash valley here was a wide steppe valley bordered on the north and south by mountain ranges, and, moreover, cut off from the Ili valley by a barrier of low but rugged hills, through which the river has cut a deep gorge. Thus the upper part of the Kash valley is more or less shut in and isolated, and the pheasant grounds do not connect with those of the Ili. On this account, too, it is somewhat more sheltered, and therefore warmer than the main valley. The river is broad and very swiftly flowing, which no doubt accounts for the fact that in mid-December it was not frozen over. High banks of ice lined the torrent, which made it most difficult to cross, and, indeed, the only possible crossings were in those places where rocks had caused the ice to jamb, and a narrow bridge had been formed by the blocks freezing together. The river-banks were fringed with a zone of woodland, thorn scrub and small reed beds. The trees (poplars) attained a great size, and this gave the pheasant-ground an almost English aspect, and many a bit might have been in the coverts at home. A mile-wide zone of this game-haunted jungle along the river gave me almost unlimited area to hunt over.

"I may mention that the altitude of this region was higher than that of most pheasant-grounds which I have encountered before in Central Asia. It was from 3,000 to 3,500 feet above sea level, but perhaps the sheltered nature of the country compensated for this. Mr. Miller, however, found the pheasant extending up to as far as 4,100 feet above sea level in the narrow valleys of the Kok-su, tributary of the Tekes. For four months in the year snow lies deep here; but since the great winter food supply is above ground, in the shape of berries, this does not much matter.

"The next day I started out as soon as the sun was well up, together with my man and dog. We hunted through the tree zone and then on to the river-banks, where the country was more open, and where islands on the many-channelled river, which were covered with long grass and thorn scrub, made easy ground to hunt. Most of these islands were now rendered accessible by the water channels being frozen over, and here we had the best sport. Coming through the tree belt we had killed two or three brace; but these were mostly scattered birds, and it was not until we reached the more open feeding-grounds that we found the bulk of the birds, feeding in the morning on the yellow berries of *Crategus sanguinea*. The fact that they were here in the islands and away from their real home and refuge, the thickets and jungle on the banks of the river, gave occasion for the most scientific sport. With my Turki servant and Siberian dog as beaters, I had impromptu drives, which were greatly aided by the fact that the birds always flew—when put up off these insular feeding-grounds—in a bee-line for the nearest jungle on the bank of the river. I placed myself on the frozen ground in between, and at the end of these drives, when two or three, or sometimes even six and seven, gorgeously coloured birds lay on the snow, I felt that this indeed was the real thing, without artificial methods, as nature meant it to be, and, above all, without the thought that each bird had cost a guinea to rear. But it has its drawbacks. Beaters are almost impossible to get hold of, and there is no game-cart following behind to pick up the spoil. After a dozen birds have been shot, the question arises—how to carry them? Where driving was impossible I had to resort to merely walking them up, but found that the quickness with which these wild birds sprang and their speed when on the wing made the sport quite worthy. Indeed, this trait in their character struck me so much that I carefully weighed and measured a series of cock and hen birds in order to compare them with the average English pheasant. All these birds were in fine condition, and were killed in December. The following table gives the results of forty specimens weighed and measured:—

		Maximum.	Minimum.	Average.
Weight	♂	4 lb.	2 lb.	3 lb. 7 oz.
"	♀	3 lb.	2 lb.	2 lb. 10 oz.
Total length	♂	40 in.	29½ in.	36·25 in.
" "	♀	28 in.	26½ in.	26·92 in.

"When comparing them with English birds it will be noticed that, although about the same in size, the wild Mongolian birds do not run so heavy in weight. In all cases the 'crosses' run heavier. I agree with Mr. J. G. Millais's representation of the Mongolian pheasant as a fast and high-flying bird. These birds naturally get on the wing very much quicker than the heavy English-bred pheasant, and what is more, they fly high and strong, even when not compelled to do so by tree belts. And I claim that

HOME OF THE MONGOLIAN PHEASANT, FEEDING-GROUND IN THE TIAN SHAN MOUNTAINS, BREEDING HAUNTS IN CHINESE TURKESTAN

Phasianus colchicus mongolicus Brandt

THESE hardy Ring-necks are found on tamarisk-covered sand dunes, where the birds can never even know what a tree is, or they inhabit half-floating reedy islands, or they haunt cultivated areas, while on the slopes of the mountains they range upward as high as four thousand feet, living, feeding and nesting among the conifers and poplar forests.

In the summer and autumn they wander far, but in winter the birds are compelled to search for the yellow berries of the thorn scrub, and are strictly confined to the areas where this edible grows.

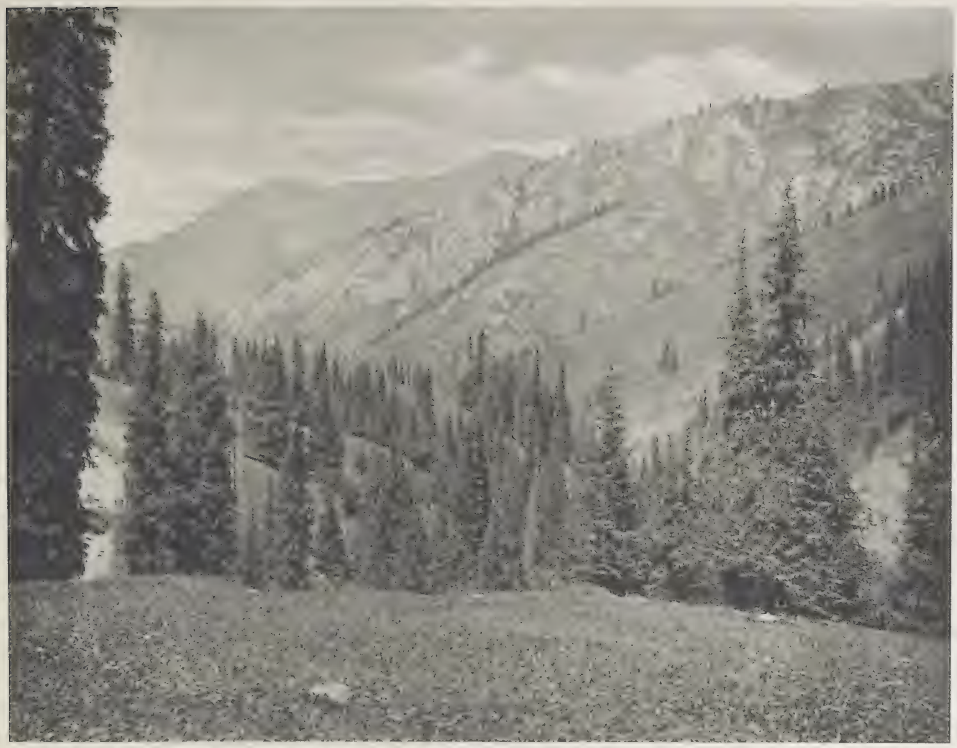
[illegible]

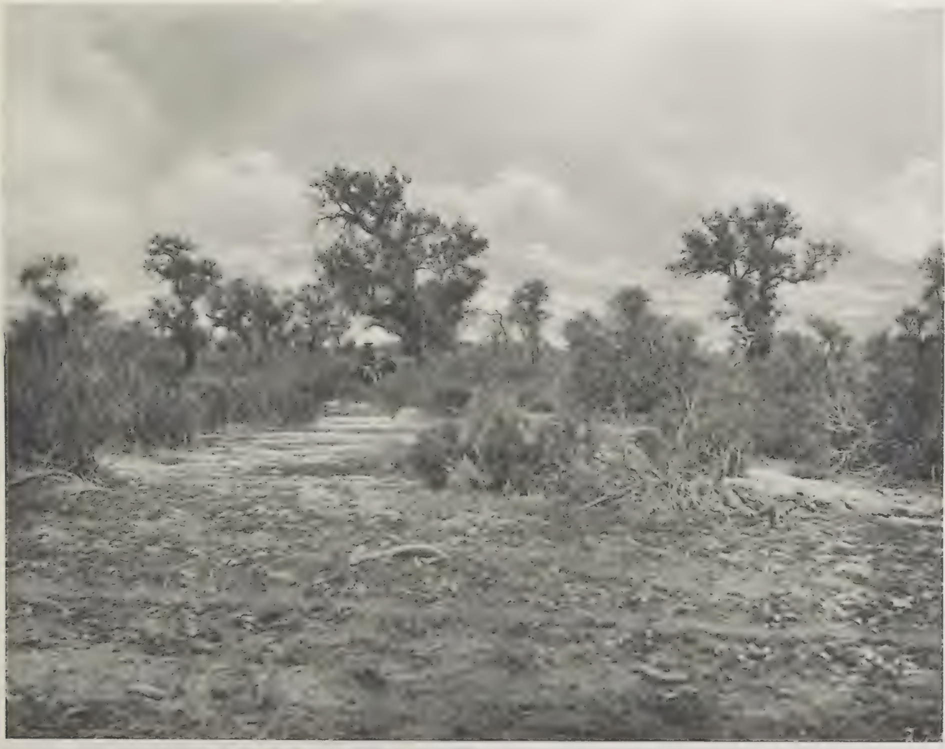
[illegible] TAINS, BREEDING IN [illegible]

Phasianus colchicus

These hardy Ring-necks are found on tamarisk-covered sand dunes, [illegible] even know what a tree is, or they inhabit half-floating reedy islands, or [illegible] while on the slopes of the mountains they range upward as high as four [illegible] and nesting among the conifers and poplar forests.

In the summer and autumn they wander far, but in wi[illegible]





HOME OF THE MONGOLIAN PHEASANT:- FEEDING GROUND IN THE TIAN SHAN MOUNTAINS.
BREEDING HAUNTS IN CHINESE TURKESTAN

if a dozen of these wild birds could be mixed with their English cousins, and put over the guns, a very large proportion would escape untouched. I have seen, too, cock birds put up one side of a river cross to the other side, a distance of perhaps 150 or 200 yards, at a height which would do credit to the most skilfully organised drive at home, and yet there was nothing to make these birds fly high. As far as my experience goes, this is not the case with the birds that have their abode in the reed beds or the plain lands of Turkestan, such as Aral, Balkash, with the rivers flowing into them, and the Zarafshan regions. There the birds fly low at all times, and do not trouble to go very far either, for their safety lies in the reedy swamps, where man cannot go. It must be remembered that a very large percentage of the pheasants of Central Asia in their natural haunts have never so much as seen a tree, much less a wooded country of considerable area containing high trees.

"Here, for instance, it was the first time that I had seen the wild pheasants go to roost in the trees. At a quarter to five every evening the jungle resounded with the 'cock-cock' of the birds as they took up their quarters for the night. This is the moment, *par excellence*, for the native hunter as he creeps through the undergrowth, and he never fails to bag a bird at each shot from his old muzzle-loader. The birds are very loath to fly when once off the ground, and country, which before seemed birdless owing to their running powers and close sitting, now showed the true number of pheasants inhabiting it.

"Besides the native gunner, the pheasants have a great enemy in the falconer. The Kirghiz, always fond of sport, spend a good deal of their time during the winter in flying their hawks at pheasants. Their favourite hawk for this purpose is the goshawk or karchigai, a bold, fearless bird, easily able to take such game. It was with much interest that I watched a native hawk-catcher at work; his methods were so much like those of the fowlers of other far-distant countries. A circle of very light but large-meshed netting, supported on light wands, surrounded a bare space, in the middle of which was placed a captive pigeon on a block. A string attached to the pigeon's wings made the bird flutter at the will of the fowler, who lay concealed under a heap of brushwood at a short distance. A wild hawk, attracted by the fluttering pigeon, 'stoops' at it, is entangled in the netting, and at the mercy of the falconer.

"In the daytime, too, during the winter months one may find the pheasants off the ground, high in the thorn scrub, feeding on the yellow berries, which form their chief article of diet. If it were not for the great winter supply of frozen berries, which, by the way, the Chinese call 'pheasant food,' the birds would indeed be in a bad way. As it was, all the birds that I killed in the middle of December, in spite of a month of snow-covered ground and bitter cold, were very fat and in the best condition. I opened as many as thirty crops, and found all full of this berry, and little else besides. But they have to make use of the whole day in order to get their fill, and were busy feeding during the nine hours of daylight.

"During the first day I shot twenty-six birds, and at dusk retired to the native house, where I spent most of my time in devising a method for keeping my specimens out of harm's way. What with cats and the native child, who would pull out all the long tail-feathers, I had my work cut out. The next day I shot through the more densely timbered country, and found birds fairly numerous in certain localities—

wherever there were berries, in fact. The runners proved a nuisance, but several were saved by my dog, who was, however, more addicted to fur than feather, for he was of the breed used by the Siberian fur-hunters, and had been trained to run sable and to "tree" squirrels. He was quite out of place at a pheasant shoot, and preferred the chasing of innumerable hares, which literally swarmed in this region. When my good cartridges began to run out, I used to put an English cartridge into one barrel and a Russian into the other, with most pleasing results to the bird at which the Russian was fired. The comparison was so marked that my native soon saw the joke of it, and when a bird passed away untouched, to the resounding bang of a smoky Russian, he would cry out 'Ruski,' whilst 'Inglis' was his echo to the sharp, clean sound of a smokeless Schultze and a crumpled bird falling to earth.

"I finished my supply of ammunition and returned to my quarters in the native house. Here I laid out the bag, and found that I had shot forty-one birds, and that the proportion of males to females was twenty-seven to fourteen. This was remarkable, for although I actually needed more cocks than hens, yet I had not taken the least trouble to get them. In fact, I am sure that I put up more cock birds than hens. In one locality alone I remember finding a very great majority of hen birds, and it is possible that they have their haunts perhaps on some of the inaccessible islands, where food is plentiful and enemies scarce. The next day I packed a horse with a couple of sacks containing the birds, and, crossing the Kash by a narrow ice bridge, under which the torrent wound threateningly, rode back to Kuldja in fourteen hours.

"The possibilities of pheasant shooting on the Kash are very great. Two guns would increase the bag to far more than double, and if a few beaters could be hired, and a man with a pony engaged to carry the spoil, shooting would become more of a pleasure and less of a labour. The birds are certainly numerous, and not likely to diminish in numbers. They have endless territory, the natives scarcely hunt them at all, and never sufficiently to make the least impression on their numbers, whilst there are but few enemies in the shape of wild cats and foxes. In spring and summer, when the foliage is out, it is scarcely possible to find or to put them up. Thus they are naturally protected during the breeding season. The climate, also, is so even, and the weather so constantly true to itself, that little or no damage is ever done to young birds. The Mongolian pheasant has, in fact, everything that nature means it to have and none of those artificial benefits which attend the life history of an English-bred bird."

SYNONYMY

Phasianus colchicus Licht., in Eversm., Reise. nach Buchara, 1823, p. 133 (nec Linné), (Kuwan and Jan Darjo); Meyend, Voy. a Bokhara, 1826, p. 428.

Phasianus torquatus Karelin, Bull. Soc. Nat. Mosc., 1841, p. 561 (Tarbagatai), (nec Gmelin, 1788).

Phasianus mongolicus Brandt, Bull. Acad. St. Petersb., III. 1844, p. 51 (Altai); Gould, Birds Asia, VII. 1858, pl. XLI.; Sclater, List. Phas., 1863, p. 4; Sclater, Proc. Zool. Soc. London, 1863, p. 116; Gray, List Gall. Brit. Mus., 1867, p. 27; Gray, Hand-list Birds, II. 1870, p. 257; Elliot, Proc. Zool. Soc. London, 1870, p. 408; Elliot, Mono. Phas., II. 1872, pl. IV. (text); Sewertzow, Turkest. Jevotn., 1873, p. 68; Sewertzow, Bull. Mosc., XLVIII. pt. iii, 1875, p. 208; Sewertzow, Jour. für Orn., 1875, p. 224; Sewertzow, Ibis, 1875, p. 493; Dresser, Ibis, 1876, p. 323; Finsch, Verh. Ges. Wien, XXIX. 1880, p. 241; Bogdanow, Consp. Av. Ross., fasci. I. 1884, p. 20; Seebohm, Ibis, 1887, p. 173; Pleske, Mem. Ac. St. Petersb. (7), XXXVI. 1888, No. 3, p. 47 (Chinaz); Alphéraky, Kuldja and Tian-Shan (Russ.), 1891, pp. 5, 17, 19, 22, 29, 48, 89, 98, 153; Kozlow, Results of the I.R.G.S. Exped. in C. Asia in 1893–5, II. 1899, p. 5; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 328; Sharpe, Hand-list Birds

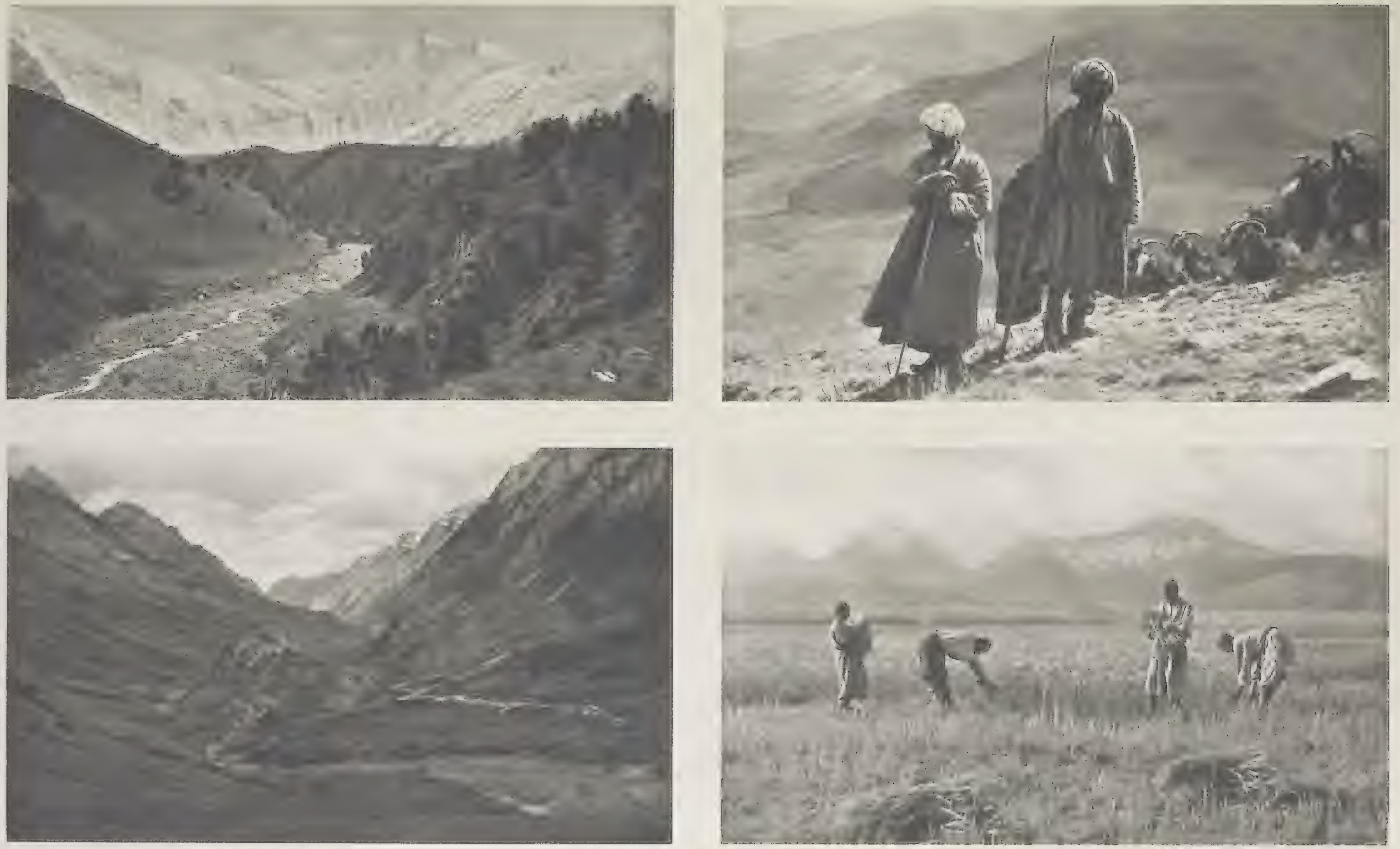
HAUNTS OF THE TURKESTAN MONGOLIAN PHEASANT OR SYR-DARIA RING-NECK

Phasianus colchicus turcestanicus Lorenz

Over the great, but little known region of Turkestan known as Syr-Daria, with its rugged gorges and snow-capped mountains, its scattered villages, fields of grain and herds of goats, the most western of all the Ring-necks is found.

It drinks at tiny meandering streams, which in spring become raging torrents, it gleans from the grain in autumn or scratches in the frozen ground in winter. Among the wind-blown sturdy shrubs or the long waving reeds it roosts at night, ever seeking to avoid the hosts of enemies which threaten it on every side.

PHOTOGRAVURE PLATE 46.



HAUNTS OF THE TURKESTAN MONGOLIAN PHEASANT

1899, Vol. I. p. 37; Dresser, Manual Palae. Birds, II. 1903, p. 665 (partim, *cum turcestanica ave*); Buturlin, Ibis, 1904, p. 395; Russel, Field, CIV. 1904, p. 982 (importation and breeding); Tegetmeier, Pheasants, 4th ed., 1904, p. 174 (coloured frontispiece); Dresser, Ibis, 1905, p. 152 (egg); Buturlin, Ibis, 1908, p. 574; Lord E. Hamilton, Country Life, XXI. 1907, p. 321 (characters and hybrids); Rothschild, Bull. Brit. Orn. Club, XI. p. 53.

Phasianus semitorquatus Sewertzow, Ibis, 1875, p. 491 (N.E. of Kuldja); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 329; Lorenz, Orn. Monat., 1896, p. 190 (Manas, Chiho); Dresser, Manual Palae. Birds, II. 1903, p. 665 (subsp. of *Ph. mongolicus*).

Phasianus mongolicus semitorquatus Pleske, Bull. Acad. St. Petersb., XIII. 1892, p. 295; Kozlow, Results of the I.R.G.S. Exped. in C. Asia (Russ.), II. 1899, p. 286; Buturlin, Ibis, 1904, p. 396.

Phasianus torquatus mongolicus Rothschild, Bull. Brit. Orn. Club, XII. 1901, p. 21.

Phasianus brandti Rothschild, Bull. Brit. Orn. Club, XII. 1901, p. 20 (withdrawn in 1903 by author).

Phasianus colchicus mongolicus Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Millais, Nat. Hist. Brit. Game-birds, 1909, p. 101 (coloured figure); Hartert, Nov. Zool., XXIV. 1917, p. 450.

Phasianus colchicus semitorquatus Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37.

Phasianus mongolicus mongolicus Alphéraky and Bianchi, Ann. Mus. Zool. Ac. St. Petersb., XII. 1908, p. 443.

YARKAND PHEASANT

Phasianus colchicus shawi Elliot

Names.—Subspecific: *shawi*, named for Robert Shaw, one of the few early English explorers who have been to Yarkand and returned alive. English: Yarkand or Shaw's Pheasant.

Type.—Locality: Yarkand. Describer: D. G. Elliot. Place of Description: Proc. Zool. Soc. London, 1870, p. 403.

Subspecific Characters.—Male: The lesser and median wing-coverts white or whitish-buff; the lower back, rump and upper tail-coverts are orange bronze with greenish and purplish reflections; the feathers of the lower back and rump have a green spot on each side of the shaft; the upper back and breast edged with black, often glossed with green, the golden ground-colour dominating the black on the back; dark bars on basal half of middle tail-feathers usually 3 to 4 mm. wide. Female: Very pale; ground-colour of mantle pale rufous-buff; general colour of remainder of plumage light buff.

GEOGRAPHICAL DISTRIBUTION

The Yarkand Pheasant has a wide range in the western part of Chinese Turkestan, including the valleys of the Khotan-Daria, Yarkand-Daria and the Kashgar-Daria, the upper reaches of the Tarim River and the lower parts of the Aksu Valley. It keeps to the lower slopes, seldom ranging high up on the mountains. The caravan-road from Sanju to Kashgar forms its south-western boundary. The impassable, snow-clad chain of the Tian-Shan almost shuts off the Yarkand Pheasant, the most easterly of the white-winged group, from its northern and north-western neighbours, the white-collared, copper-throated, silvery-grey-winged *mongolicus*. From *bianchii* on the upper Oxus it is separated by the great ranges of the Pamirs and Alai. Eastward the Yarkand Pheasant has no definite physical boundary and somewhere in the valley of the middle Tarim meets the sandy-winged *tarimensis*.

SYNONYMY

Phasianus shawi Elliot, Proc. Zool. Soc. London, 1870, p. 403 (Yarkand); Elliot, Mono. Phas., II. 1872, pl. I. (text); Scully, Stray Feathers, III. 1875, p. 433; Scully, Stray Feathers, IV. 1876, pp. 75, 80, 83, 179 (Kashgar, Beshkent, Yarkand); Gould, Birds Asia, VII. 1876, pl. XXXV.; Seebohm, Ibis, 1887, p. 171; Seebohm, Proc. Zool. Soc. London, p. 415 (Aksu and Khotan Darya); Sharp, Sec. Yark., Miss. Aves, 1891, p. 120 (Guma, Yarkand, Marálbáshi); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 326; Richmond, Proc. U.S. Nat. Mus., XVIII. 1897, p. 588; Sharpe, Hand-list Birds, Vol. I. 1899, p. 37; Dresser, Manual Palae. Birds, II. 1903, p. 660; Buturlin, Ibis, 1904, p. 394 (Western Chinese Turkestan); Buturlin, Ibis, 1908, pp. 585, 589.

Phasianus insignis Elliot, Proc. Zool. Soc. London, 1870, p. 404 (Yarkand); Elliot, Mono. Phas., 1872, pt. ii, pl. III.; Scully, Stray Feathers, III. 1875, p. 433.

Phasianus chrysomelas Elliot, Stray Feathers, V. 1877, p. 198 (nec Sewertzow, 1875).

Phasianus colchicus shawi Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool., XXIV. 1917, p. 450.

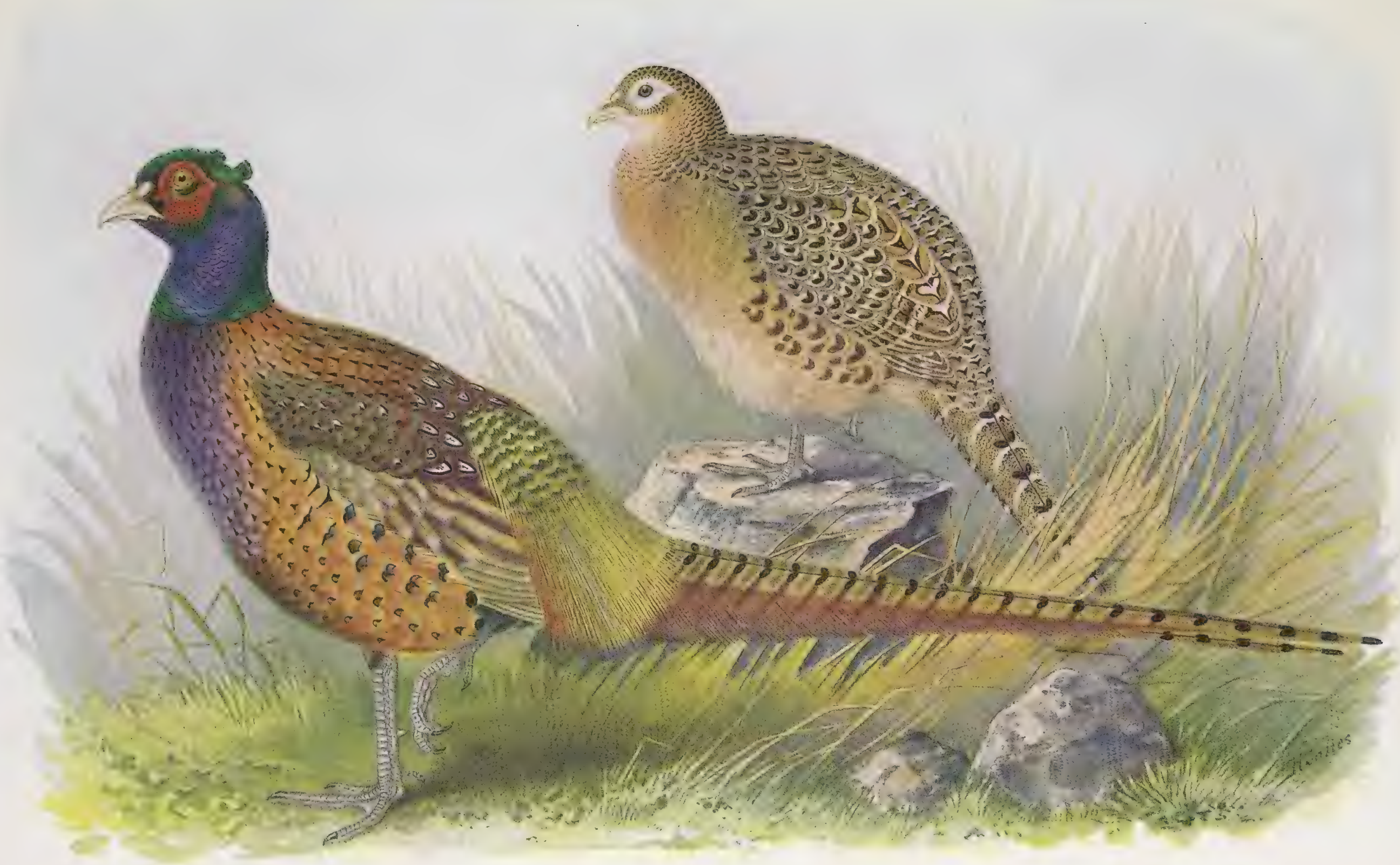
Phasianus shawi chrysomeloides Lorenz, Ornith. Mon., XVII. 1909, p. 171 (E. Turkestan).

TARIM PHEASANT

Phasianus colchicus tarimensis Pleske

In the poplar forests along the Tarim River these birds live in covies, depending on berries for food during the hard winters and often compelled to roost on the slight branches of the poplars to avoid their enemies on the ground. Besides the foxes and smaller vermin, they look down from their perch upon troops of wild pig and wild camels, which pad softly over the sand, while overhead flocks of wild geese drive northward almost before the ice breaks from the river and pools.

PLATE LIII.



TARIM PHEASANT.

TARIM PHEASANT

Phasianus colchicus tarimensis Pleske

NAMES.—Subspecific: *tarimensis*, after the Tarim River, the lower valley of which is the bird's chief haunt. English: Tarim Pheasant.

TYPE.—Describer: Pleske. Place of Description: Reisen in Tibet by Przewalski, 1883, p. 95.

SUBSPECIFIC CHARACTERS.—Male: Closely resembles *shawi*, but the lesser and median wing-coverts are sandy-rufous instead of whitish; breast fiery bronze red, glossed with oily green and purple, and without marginal band of black; edges of rump and upper tail-coverts greenish buff, not orange red. Female: Similar to the female of *shawi*.

GEOGRAPHICAL DISTRIBUTION

EASTERN parts of Chinese Turkestan, including the lower Tarim and Cherchen-Daria and the lakes Bagrach-kul and Lob-nor.

GENERAL ACCOUNT

Together with the Yarkand Pheasant (*shawi*) the Tarim bird occupies a range enclosed, for the most part, by deserts and mountains. On the north and north-west the great wall of the Tian-Shan separates it from *mongolicus*, while on the east the waterless Kum-Tag desert intervenes between it and the grey-rumped *satscheuensis*; and from *vlangalii* in the south-east it is shut off by the lofty and majestic Altyn-Tag. To the west the way is more open and along the course of the Tarim River it somewhere meets the easternmost individuals of the Yarkand Pheasant.

Here in Eastern Turkestan we are in the heart of the distribution of this great Asiatic genus of pheasants. The disintegrated, hairy condition of the lower back and rump feathers is one of the most salient characters of *Phasianus*, and here in mid-Asia we find the point of divergence in the colour of these feathers. From the Caucasus eastward we have had to do with coppery-red rumped birds. From now onward to the Pacific we shall find the rumps of the pheasants to be olive grey. The Tarim bird with its greenish-buffy rump is somewhat intermediate, but on the whole shows a dominant relationship to the western group, through the Yarkand Pheasant, while it is more clearly distinguished from its neighbours by its yellowish-brown wing-coverts. In *shawi* these feathers are yellowish white, in *mongolicus* silvery white, in *vlangalii* ashy grey tinged with greenish, while the wing-coverts of *satscheuensis* are lavender grey.

SYNONYMY

Phasianus shawi Przewalski, Proc. Imp. Russ. Geogr. Soc., XIII. 1877, p. 275 (Lob-nor) (nec Elliot, 1870).

Phasianus tarimensis Przewalski, from Taissan through Khami to Tibet, 1883, p. 95 (*descr. nulla*); Przewalski, Reisen in Tibet, 1884, p. 59; Pleske, Proc. Zool. Soc. London, 1888, p. 415 (Karaschar to Lob-nor); Grant, Cat., Birds Brit. Mus., 1893, XXII. p. 327; Kozlow, Res. Imp. Russ. Geogr. S. Exped. C. Asia, II. 1899, pp. 74, 286, (Koncke-Daria); Sharpe, Hand-list Birds, Vol. I. 1899, p. 37; Dresser, Manual Palae. Birds, II. 1903, p. 662 (subsp. of *Ph. persicus*); Buturlin, Ibis, 1904, p. 397 (Eastern Chinese Turkestan); Dresser, Ibis, 1905, p. 152, (egg); Buturlin, Ibis, 1908, pp. 585, 589.

Phasianus colchicus tarimensis Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool. XXIV. 1917, p. 451.

SATCHU OASIS PHEASANT

Phasianus colchicus satscheuensis Pleske

NAMES.—Subspecific: *satscheuensis*, from the bird's home, the Satchu Oasis. English: Satchu Oasis Pheasant.

TYPE.—Locality: Oasis of Satchu. Describer: Pleske. Place of Description: Bull. Acad. St. Petersb., XIII. 1892, p. 296.

SUBSPECIFIC CHARACTERS.—Male: Distinguished from its nearest neighbours *tarimensis*, *vlangalii* and *strauchi* by its very pale colour and white collar, and from *torquatus* by the sandy-brown instead of Indian-red margins of the scapulars and secondaries, while the margins of the ventral plumage are wide and purplish green. Female: Is very much paler than *torquatus*, the dorsal plumage pale buff with greatly reduced black markings.

GEOGRAPHICAL DISTRIBUTION

THE most western portion of Kansu, north of the Nan-shan. Along the valley of the Buluzin and the marshes and lake of Khalachi-Nor; the valley of the Dankhe, the oasis of Satchu; Ansu, Shao-wan and Shanto-po, from 2,000 to 7,000 feet.

SYNONYMY

Phasianus satscheuensis Przewalsky, from Zaissan through Khami to Tibet (Russ.), 1883, p. 95 (*descr. nulla*); Pleske, Bull. Acad. St. Petersb., XIII. 1892, p. 296 (N. of Nan-shan Mts.); Kozlow, Res. Imp. Russ. Geogr. S. Exped. C. Asia (Russ.), II. 1899, pp. 107, 113, 286; Buturlin, Ibis, 1904, p. 398.

Phasianus satscheunensis Prjevalsky, Reisen in Tibet, 1884, p. 59 (Satschen); Dedit., Jour. für Orn., 1886, p. 527; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 333.

Phasianus shawi Seebohm, Ibis, 1888, p. 415 (partim, Satschen).

Phasianus satschuensis Dresser, Manual Palae. Birds, 1903, p. 667 (subsp. of *c. torquatus*).

Phasianus colchicus satscheuensis Hartert, Nov. Zool., XXIV. 1917, p. 452.

Phasianus colchicus satscheunensis Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37.

MONGOLIAN PHEASANT

Phasianus colchicus mongolicus Brandt

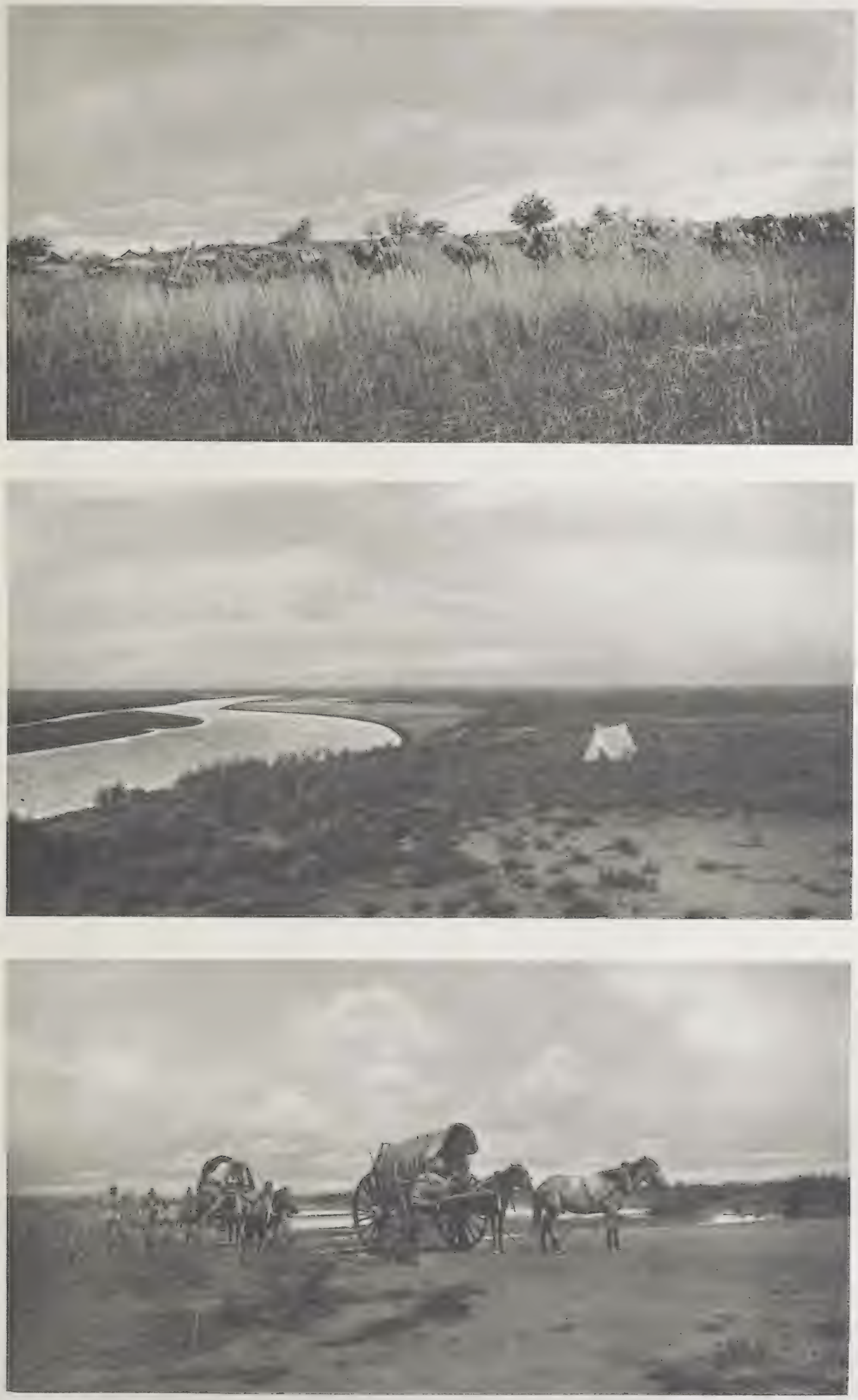
ZERAFSHAN PHEASANT

Phasianus colchicus zerafshanicus Tarnovski

TARIM PHEASANT

Phasianus colchicus tarimensis Pleske

The wildest and bleakest river basins of central Asia are inhabited by pheasants. Now and then a ragged caravan passes, hastening across the deserts from one source of water supply to the next, a line of camels bearing tea or grain. When the rivers are in flood and spread out across the deserts, the birds wander far, and roost at night among the ruins of half-buried and wholly forgotten cities. Rarely an explorer makes his way through, mapping the valleys, shooting a few specimens, and passing on never to return.



HAUNTS OF THE PHEASANTS IN CENTRAL ASIA:-

MONGOLIAN PHEASANT. ZARAFSHAN PHEASANT. TARIM PHEASANT.

TSAIDAM PHEASANT

Phasianus colchicus vlangalii Przewalski

NAMES.—Subspecific: *vlangalii*, after M. E. Vlangali, Russian Ambassador to China. English: Tsaidam Pheasant, after the great marshes, the native home of the bird.

TYPE.—Locality: Tsaidam. Describer: Przewalski. Place of Description: Mongolia, II. pt. ii, 1876, p. 116.

SUBSPECIFIC CHARACTERS.—From *elegans* on the south, the male bird differs in the mantle and scapulars being sandy red, and the sides and flanks golden buff, instead of dull orange red with a gloss of purple. In the female the upper plumage resembles that of *colchicus*, but below, the colour is pale buff.

GEOGRAPHICAL DISTRIBUTION

EASTERN TSAIDAM, extending northward to the Koko-nor Mountains and to the outlying slopes of the Tolai-Ula and Burkhan-Budda Ranges.

GENERAL ACCOUNT

Przewalski writes of the Tsaidam Pheasant: "We found this bird in Tsaidam, where it inhabits the cane-groves and bush-covered localities. In autumn and winter it feeds principally on berries, which it eats while sitting on the branches, and at that time especially is very wild and wary. It does not differ in voice from *P. torquatus*, and begins to breed very early in spring. We have heard it as early as the 13th of February."

SYNONYMY

Phasianus vlangalii Prjewalski, Mongolia, II. pt. ii, 1876, p. 116; Prjewalski, Rowley's Ornith. Missell., II. 1877, p. 386; Prjewalski, Reisen in Tibet, 1885, p. 59 (Tsaidam); Seebohm, Ibis, 1888, p. 315; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 330; Grant, Hand-book Game-birds, II. 1897, p. 30; Kozlow, Res. I.R.G.S. Exped. C. Asia, II. 1899, pp. 188, 218, 286; Sharp, Hand-list Birds, Vol. I. 1899, p. 38; Dresser, Manual Palae. Birds, 1903, p. 664; Buturlin, Ibis, 1904, p. 412.

Phasianus colchicus vlangalii Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool., XXIV. 1917, p. 452.

STRAUCH'S PHEASANT

Phasianus colchicus strauchi Przewalski

NAMES.—Subspecific: *strauchi*, after M. A. A. Strauch, the Russian Academician. English: Strauch's Pheasant.

TYPE.—Locality: Tatung, Buhuk-gol. Describer: Przewalski. Place of Description: Mongolia, II. 1876, p. 119.

SUBSPECIFIC CHARACTERS.—Usually to be distinguished from *elegans* and *vlangalii* by the purple-green instead of dark-green margins of the chest and breast feathers. Ogilvie-Grant also considers that from *elegans* it is further distinguished by having the middle of the scapulars whitish buff freckled with black next the shaft, and from *vlangalii* by the margins of these feathers being Indian red. The dorsal plumage of the female is like *colchicus*, but the nape and mantle feathers are indistinctly tipped with dark green, instead of violet and purple.

GEOGRAPHICAL DISTRIBUTION

SOUTHERN KANSU, north to the Tatung River, East central Shensi, especially in the Ta-pai-shan in the Tsin-ling Range.

GENERAL ACCOUNT

This form, living in the very heart of China, amid a great tumbled mass of mountains, is typical of its genus in the trouble it has given to taxonomists. Only when a large series was obtained by Rothschild and Hartert was proof available that the characters were so variable and so individual that they were deserving of no subspecific recognition. Hartert writes of this form:

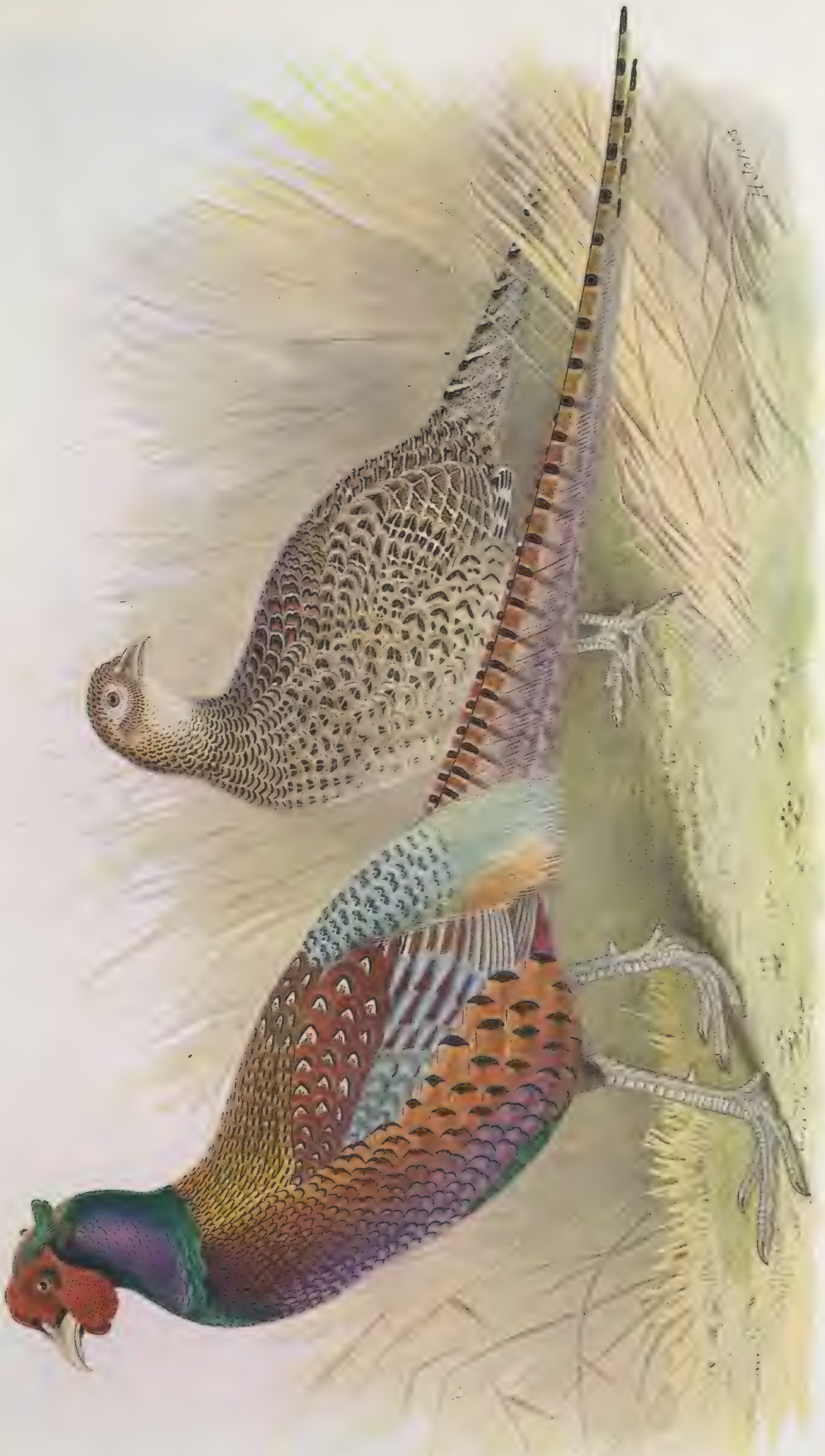
"None of the characters on which the authors relied is constant, and *strauchi* is altogether a rather variable bird. I should not have been so confident and so sure about this if we had not received from the late Alan Owston's Japanese collectors a series of not less than 28 adult males—from Ta-pai-shan in the centre of the Tsin-ling Range. This magnificent series, which I have been able to compare with twelve others in the Tring and British Museums, shows quite clearly how *strauchi* varies. The crown of the head is sometimes quite brownish bronzy, but mostly of a dark green. The white collar on the hind neck is sometimes more than a centimetre wide, and only interrupted in front, more often narrower and only indicated, and also often quite absent, without a trace of it.

"The whole upperside varies in colour, more or less, the rump chiefly according to season, as the green and creamy bars of the feathers become much more conspicuous after the breeding season, when the edges are worn off. The long middle rectrices are sometimes much lighter, sometimes darker, more tinged with rufous brown, and the width of the black bars is not constant. The underside is equally variable. The sides of the breast are sometimes much lighter, more 'buffy golden-brown,' especially in the

STRAUCH'S PHEASANT

Phasianus colchicus strauchi Prjewalski

On the wooded slopes of the Kansu Mountains, up to the height of a mile and a half above the sea, Strauch's Pheasant makes its home. It varies widely in character of plumage and on the limits of its range approaches the neighbouring forms. From six to twelve eggs are laid, and in these tumbled mountains the pheasants seem to be more strictly monogamous, the cock aiding in the care of the young, than in the great flat plains to the east, where food is more abundant and the birds are so much more numerous.



STRAUCH'S PHEASANT.

type of *berezowskyi* and in the worn plumage of summer birds. The colour of the chest and breast is also variable; sometimes these parts are so strongly washed with green and the feathers have such wide dark-green edges, that they remind one strongly of *P. colchicus vlangalii*—which is, of course, very different on the upperside. More often there is hardly any or very little green on the chest and breast, except along the middle of the latter.

"Among the Tsin-ling males are specimens which agree absolutely with others collected in Kansu by Russian explorers and received from the museums in St. Petersburg and from the late Th. Lorenz in Moscow, others which agree with the type of *berezowskyi* and with *chonensis*, as well as with *holdereri*, as far as I remember, having seen the latter some years ago, and judging from the description of Schalow. With regard to that, it is remarkable that the author named a bird shot on the same day, and therefore not far away—as one does not travel fast in those mountains—*P. strauchi*."

We know little of Strauch's Pheasant, except what Przewalski tells us: "The bird inhabits the wooded parts of the Kansu Mountains, up to an absolute height of 10,000 feet. It appears to be most numerous in the Tetunga and Buguk-gol valleys, but higher up these rivers, where woods are scarce, it disappears.

"In voice and habits it does not differ from *P. torquatus* and *P. vlangalii*. The breeding season commences in March or April, and lasts until the middle of July. The earliest young we obtained on the 23rd of June. The number of young varies from six to ten, and sometimes even twelve; they are always accompanied by both parents, and very often the male bird defends the young even more vigorously than the female."

SYNONYMY

Phasianus strauchi Przewalski, Mongolia, II. 1876, p. 119; Przewalski, in Rowley's Orn. Misc., II. 1877, p. 417; Przewalski, Reisen in Tibet, 1884, p. 59 (Kansu); Seebohm, Ibis, 1888, p. 314; Seebohm, Proc. Zool. Soc. London, 1888, p. 267 (extends south to M.); Seebohm, Ibis, 1888, p. 314; Berezowskyi and Bianchi, Birds of the Kansu Exped., Potanin (Russ.), p. 18 (pt. Hoo-sian); Pleske, Bull. Ac. St. Petersb., XIII. 1892, p. 296 (Sining Mountains, Tatung Mts., and River, and Mts. of Amdoa); Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 330; Grant, Hand-book Game-birds, II. 1897, p. 29; Grant, Hand-list Game-birds, 1899, Vol. I. p 38; Buturlin, Ibis, 1904, p. 410; Buturlin, Ibis, 1908, p. 575.

Phasianus torquatus David et Oustalet, Ois. Chin., 1877, p. 409 (pt. var. "C," Chensi meridional); Berezowski and Bianchi, Birds of the Kansu Exped., Potanin (Russ.), p. 18 (W. and E. Ordos); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 331 (partim); Dresser, Manual Palae. Birds, 1913, p. 665 (partim).

Phasianus decollatus David et Oustalet, Ois. Chin., 1877, p. 411 (partim, S. Shensi); Grant, Cat. Birds Brit. Mus., XXII. 1893 (partim; Sinling Mts.).

Phasianus holdereri Schalow, Jour. für Orn., 1901, p. 414 (N. China); Parrot, in Wiao, Ergb. der Exp. Tilchner, nach China u. Tibet, 1903–1908, Bond X, 1 Tiel, p. 132; Thayer and Bangs, Mem. Mus. Comp. Zool., Harvard, XL. 1912, p. 140; Buturlin, Ibis, 1904, p. 406; Alphéraky and Bianchi, Ann. Mus., St. Petersb., XII. p. 447.

Phasianus berezowskyi Rothschild, Bull. Brit. Orn. Club, XII. 1901, p. 20 (Hui-Tsian); Dresser, Man. Palae Birds, 1903, p. 663 (Subsp. of *strauchi*); Buturlin, Ibis, 1904, p. 411.

Phasianus colchicus strauchi Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool., XXIV. 1917, p. 451.

Phasianus decollatus, var. Bianchi, Bull. Acad. St. Petersb., V. 1906, ser. XXIV. t.n. 1 & 2, pp. 83, 90; Bianchi, Aves Exped. Kozlowi, 1907, p. 201 (var. indiv.).

Phasianus decollatus strauchi Bianchi, Bull. Ac. Sc. St. Petersb., V. 1906, ser. XXIV., t.n. 1 & 2, p. 90 (Russ.), (pt. var. from Soho-choto ad. ped. sept. jug. Nan-Schan); Alphéraky and Bianchi, Ann. Mus. Zool. St. Petersb., XII. 1908, p. 447.

Phasianus decollatus decollatus Alphéraky and Bianchi, Ann. Mus. Zool. St. Petersb., XII. 1908, p. 451.

Phasianus decollatus berezowskyi Buturlin, Ibis, 1908, p. 578.

Phasianus strauchi sohokhotensis Buturlin, Ibis, 1908, p. 576.

Phasianus strauchi chonensis Grant, Bull. Brit. Orn. Club, XXXI. 1912, p. 16.

STONE'S PHEASANT

Phasianus colchicus elegans Elliot

NAMES.—Subspecific: *elegans*, Latin, elegant, graceful. English: Stone's Pheasant. Vernacular: Tarechi (Lola), Wucru (Kachin), Tso-ka (Tibetan).

TYPE.—Locality: Yun-ling Mountains. Describer: D. G. Elliot. Place of Description: Ann. and Mag. Nat. Hist. (4), VI. 1870, p. 312.

SUBSPECIFIC CHARACTERS.—Male: Differs from *vlangalii* in having the flanks coppery maroon instead of golden buff, and the mantle and scapulars maroon instead of sandy red. *P.c. decollatus* and *strauchi* have the dark green of the back broken by bands of the yellow or coppery red of the chest, while in *elegans* the green extends unbroken to the middle of the chest and breast. Female: Very close to the females of the neighbouring forms on the east and north, but differing from *colchicus colchicus* in the white throat and fore-neck, and the irregularly black-barred underparts.

GEOGRAPHICAL DISTRIBUTION

MOUNTAINS of eastern Tibet, south-western Szechuan, north-western Yunnan, Kachin Hills, and Northern and Southern Shan States.

GENERAL ACCOUNT

This is the only member of the genus which occurs within the boundaries of British India. I heard pheasants calling near Myitkyina while I was outfitting for my expedition eastward into Yunnan, but had no opportunity of searching for them. Not until I was on my way back, after studying the Gennaeus hybrids beyond Sadon, did I find *elegans*. A half-eaten bird taken from a Kachin dead-fall was easily identified as this form, with the unusual character of a posterior white collar, almost half an inch in width. Two days later I shot a male pheasant in nearly adult plumage, close to the slope down which the flocks of kaleege came each day to drink.

I learned nothing of the habits of this bird, and the natives called them merely wild hen, *Tarechi*.

W. R. Zappey, who has shot these birds in western Szechuan, writes me that he found them from Wa Shan, the Lolo country, to Tachien-lu, at from five to ten thousand feet altitude. They occurred more frequently in grassy and bushy places near cultivation, and kept in small families. One day, while he was shooting these birds, he drove a male out from a patch of cover into a ploughed field. A golden eagle saw it and made a swoop. The pheasant squatted on a clod of earth until the eagle was very close, and then by a half-run, half-fly of a few feet to one side, avoided its assailant. The eagle rose, circled a few times, and swooped again, and again the pheasant dodged sideways. This time the eagle gave up the chase.

Captain Davies found these pheasants near the summits of the ranges in Western

YUNNAN BLACK-NECKED OR STONE'S PHEASANT

Phasianus colchicus elegans Elliot

THIS is the only member of the entire genus which occurs within the boundaries of British India. In Yunnan the bird is found in the same general environment as the silver kaleege pheasants. A hunter I knew drove a cock bird out of cover into a ploughed field, and a golden eagle made a swoop at it but missed.

Stone's pheasant roams over the wooded heights of the maze of mountains along the Burma-Chinese frontier, and finds its food by scratching among the dead leaves and ferns of the forest undergrowth.

HOME OF THE YUNNAN BLACK-NECKED PHEASANT

Yunnan in long grass and fern, or in fir woods, singly or in pairs, and once in a covey of ten.

Three eggs in the collection of Charles M. Inglis, apparently from a set of seven, were indistinguishable from the eggs of the common pheasant, a deep brownish olive in colour. They measured 34·2 by 44·1, 35 by 44·4, and 34·1 by 43·9 mm.

I have been able to examine only a few individuals, so that I feel more certain in copying the detailed description given by E. C. Stuart Baker, as he must have access to large series.

DETAILED DESCRIPTION

Adult Male.—Crown from forehead to nape and hind neck bronze green, the ear tufts darker and more blue; chin and throat deep green; neck in front and on the sides deep purple blue, with purple copper reflections in some lights, this colour passing around the base of the neck as a collar behind; upper back golden chestnut, changing into deep chestnut on the back and scapulars; the feathers next the neck are centred with black and their tips are notched with the same; the feathers of the back and scapulars have black centres mottled and sub-outlined with buff, and the same notches as on the upper back, but the black obsolete. Lower back, rump and tail-feathers pale green-grey, with sub-terminal bars of lustrous emerald green, and each feather with the concealed base black with buff concentric bands. Tail-feathers rufous brown with broad black bars, narrowly edged above and below with golden buff; the central pair have wide margins of pink grey, across which the black bands are continued as dull purple marks; on each succeeding pair the pink edges are reduced in size, and are absent on the outermost pair, and sometimes on one or two of the next pairs also.

Wing coverts pale green grey with emerald green reflections, and with the innermost greater coverts splashed with maroon, broadly on the outer and narrowly on the inner webs; quills brown, the primaries barred with buff on the outer webs, and with broken bars on the inner; secondaries broadly edged with olive brown and irregularly marked with buff on both webs.

Below, breast deep glossy green, each feather narrowly margined with velvety black, and those on the lower breast notched, though less conspicuously so than on the back; flanks and sides of the breast golden copper, becoming almost purple copper next the green of the breast, each feather with a bold edging of velvet black which runs down the end of the shaft towards the green base; vest, thighs and centre of abdomen dull brown; under tail coverts chestnut with black marks. Facial skin scarlet, legs and feet lead colour. Measurements: bill from gape, 35·5 mm.; wing, 210·8 to 228·6; tail, 391·1 to 487·6; tarsus, 63·5 to 68·5; spur, 10·1 mm.

Adult Female.—Crown and neck dark brown or black with narrow bars of buff, sometimes with a distinct tinge of chestnut; back and scapulars chestnut with white sub-edging, and very fine edges of black and a bold bar of the same between the chestnut and the white. Remainder of upper plumage pale grey brown with narrow buff edges and black centres, with here and there a tinge of chestnut showing very irregularly. Central tail-feathers pale olive brown with narrow paler cross-bars broadly margined on either side with black; remaining tail-feathers dull chestnut with similar bars; in all the tail-feathers the markings are irregular and somewhat mottled, giving a mottled appearance to the whole.

Below, the chin and throat are pale buffish, obsoletely barred with dark brown; forehead and upper breast with bolder bars of black and black centres, and washed with a pinky reddish tinge; lower breast, flanks and abdomen dull greyish-buff, with numerous faint vermiculations of grey brown, and with visible centres of deep chestnut-brown; under tail coverts the same marked with chestnut. Three females from Chang Youn, in China, are more richly coloured above than any of the more western birds, but at the same time have practically no dark markings on the lower breast and abdomen; the flanks and thigh coverts are, however, fully as boldly marked as the other birds. (My own notes state that the facial skin, legs and feet are pale lead-grey.—W. B.)

Measurements: bill from gape, 33 mm.; wing, 198·1 to 208·3; tail, 246·4 to 271·8; tarsus, 60·9 to 66 mm.

SYNONYMY

Phasianus elegans Elliot, Ann. Mag. Nat. Hist. (4), VI. 1870, p. 312; Sclater, Proc. Zool. Soc. London, 1870, p. 670 (Yun-ling Mts., W. Sze-cheun); Elliot, Mono. Phas., II. 1872, pl. VIII. (text); Seebohm, Ibis, 1888, p. 315; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 329; Grant, Hand-list Game-birds, II. 1897, p. 31; Blanford, Fauna Brit. India, Birds, IV. 1898, p. 81; Oates, Man. Game-birds, I. 1898, p. 299; Styan, Ibis, 1899, p. 298; Davies, Ibis, 1901, p. 408; Buturlin, Ibis, 1904, p. 411; Harrington, Jour. Bombay Nat. Hist. Soc., XIX. 1909, p. 301; Sclater, Ibis, 1912, p. 554; Ingram, Nov. Zool., XIX. 1912, p. 271; Bailey, Geog. Jour., XXXIX. 1912, p. 346; Bailey, Jour. Bombay Nat. Hist. Soc., XXII. 1913, p. 367; Bangs and Phillips, Bull. Mus. Comp. Zool., LVIII. No. 6, 1914, p. 269; Baker, Jour. Bombay Nat. Hist. Soc., XXV. No. 3, 1918, p. 358.

Phasianus sladeni Anders, MS.; Elliot, Proc. Zool. Soc. London, 1870, pp. 404–8; Anders, Proc. Zool. Soc. London, 1871, p. 214; Swinhoe, Proc. Zool. London, 1871, p. 387; David et Oustalet, Ois. Chine, 1877, p. 411; Anders, Birds W. Yunnan, 1878, p. 671.

Phasianus colchicus elegans Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool., XXIV. 1917, p. 451.

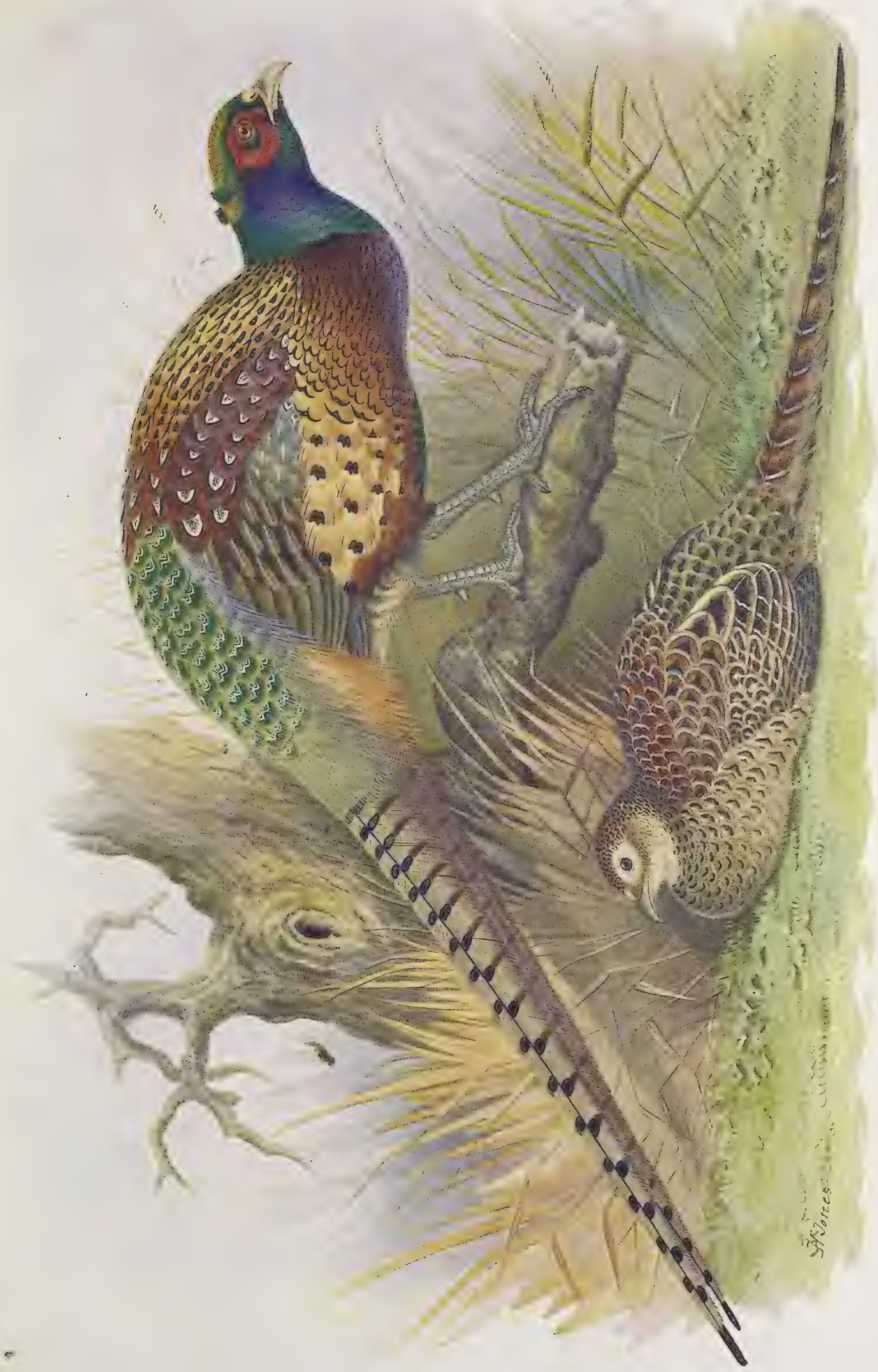
Phasianus süchschanensis Bianchi, Bull. Acad. St. Petersb., V. ser. T. XXIV. No. 1 & 2c, 1906, p. 83; Buturlin, Ibis, 1908, p. 574.

KWEICHOW PHEASANT

Phasianus colchicus decollatus Swinhoe

Occurring as far south as Tongking, this pheasant ranges higher than the more northern forms, and has been observed at an elevation of nine thousand feet. It seems to prefer bushy slopes to the dense forest. It differs from the pheasants to the east and north chiefly by the lack of a white collar, although traces of this are sometimes present.

PLATE LV.



KWEICHOW PHEASANT.

KWEICHOW PHEASANT

Phasianus colchicus decollatus Swinhoe

NAMES.—Subspecific: *decollatus,* uncollared, or lacking a collar. English: Kweichow, or Chinese Ringless Pheasant.

TYPE.—Locality: Chungkin in Szechuan. Describer: Swinhoe. Place of Description: Proc. Zool. Soc. London, 1870, p. 135.

SUBSPECIFIC CHARACTERS.—Close to *torquatus,* but with white collar usually wholly absent; the crown is dark green instead of pale bronze green, and the margins of the chest-feathers very broad and dark green instead of purple. Near the Ichang gorges, in the Yangtze, where this form approaches the range of *torquatus,* traces of the white collar become visible. The female resembles *strauchi,* but the black patches on the scapulars, wing-coverts and lower back are larger and more strongly marked.

GEOGRAPHICAL DISTRIBUTION

THE south-central Chinese provinces of Kweichow, Western Hunan and Kwangsi, Eastern Yunnan, and Szechuan as far as Tatsienlu. Four birds have been secured in northern Tongking.

GENERAL ACCOUNT

Pratt in Szechuan tells us that this pheasant is found on the grassy slopes on the spurs of the mountains up to an elevation of 9,000 feet. It avoids the forest regions, preferring bushy fields, and in confinement it always roosted on the ground. Blackwelder found newly hatched chicks at Tahopa on 7th of May.

SYNONYMY

Phasianus decollatus Swinhoe, Proc. Zool. Soc. London, 1870, p. 135 (Sze-chuen); Elliot, Proc. Zool. Soc. London, 1870, p. 408; Swinhoe, Proc. Zool. Soc. London, 1871, p. 398; David, N. Arch. Mus. Bull., VII. 1871, p. 11 (Sze-cheun]; Elliot, Mono. Phas., II. 1872, pl. vii. (text); David et Oustalet, Ois. Chine, 1877, p. 411, pl. 100 (partim, *cum Phasianus berezowskyi*); Seebohm, Ibis, 1888, p. 314; Seebohm, Ibis, 1891, p. 380; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 331; Grant, Hand-book Game-birds, II. 1897, p. 28; Sharpe, Hand-list Birds, Vol. I. 1899, p. 38; Dresser, Manual Palae. Birds, 1903, p. 663; Buturlin, Ibis, 1904, p. 409; Blackwelder, Research in China, Vol. I., pt. ii, p. 489.

Phasianus colchicus decollatus Hartert, Nov. Zool., XXIV. 1917, p. 452.

FORMOSAN RING-NECKED PHEASANT

Phasianus colchicus formosanus Elliot

NAMES.—Subspecific: *formosanus*, of Formosa, the island home of this form. English: Formosan Ring-necked Pheasant.

TYPE.—Locality: Formosa. Describer: D. G. Elliot. Place of Description: Proc. Zool. Soc. London, 1870, p. 406.

SUBSPECIFIC CHARACTERS.—The only character which can be trusted in the majority of cases is the paleness of the mantle and flanks, these being deeper and warmer in *torquatus*. I have taken two birds well up the Yangtze, which are even lighter than *formosanus*, but in these cases the green margins were very wide. In Formosan birds I have known this green to be almost absent. The females of the two forms are identical.

GEOGRAPHICAL DISTRIBUTION

THE island of Formosa.

SYNONYMY

Phasianus torquatus Swinhoe, Ibis, 1863, p. 401 (partim) (nec Gmelin).

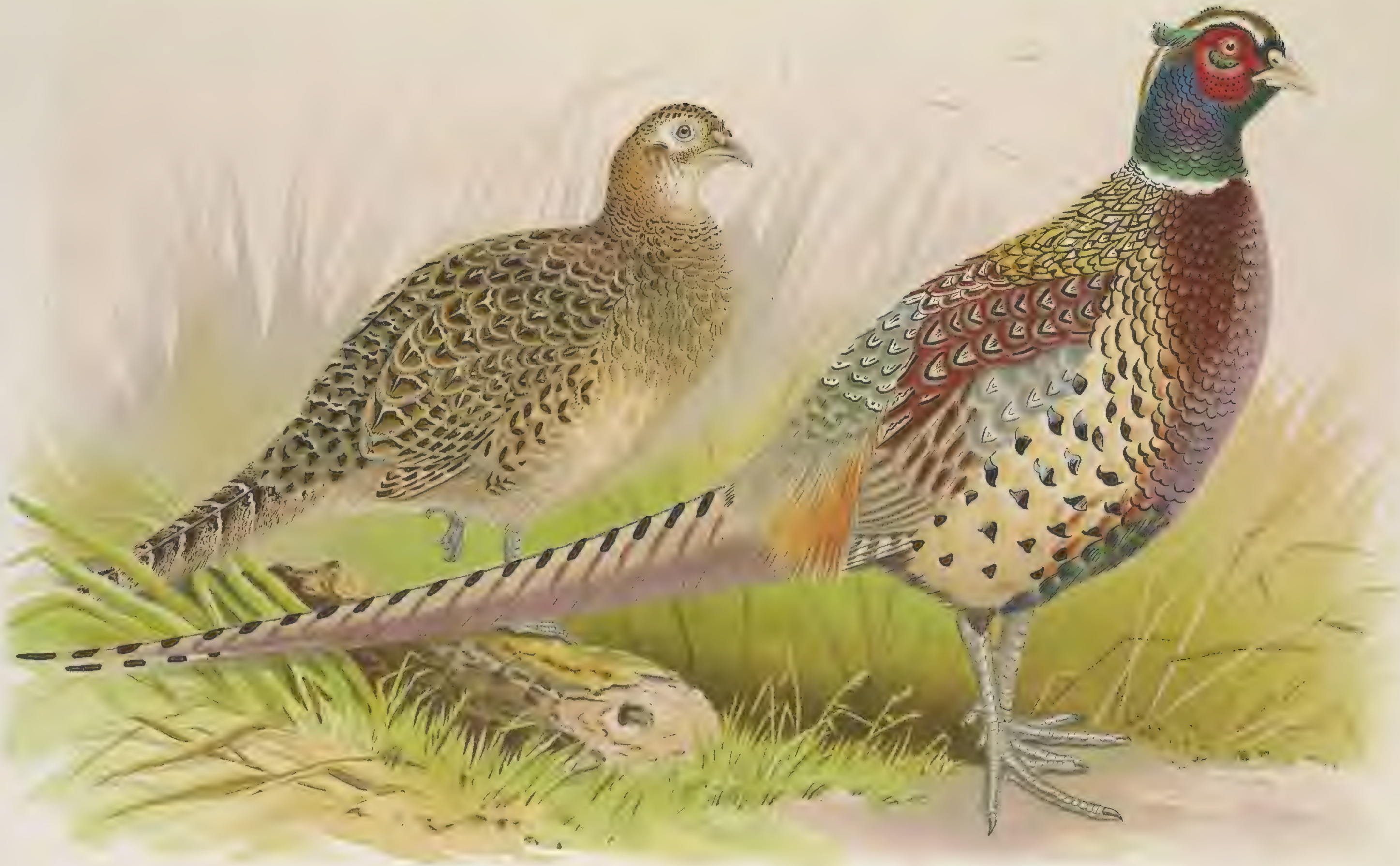
Phasianus formosanus Elliot, Proc. Zool. Soc. London, 1870, p. 406 (Formosa); Elliot, Proc. Zool. Soc. London, 1871, p. 398; Elliot, Mono. Phas., II. 1872, pl. VI. (text); David et Oustalet, Ois. Chine, 1877, p. 410; Seebohm, Ibis, 1888, p. 313; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 333; de la Touche, Ibis, 1895, p. 338; Grant, Hand-book Game-birds, II. 1897, p. 27; de la Touche, Ibis, 1898, p. 373; Sharpe, Hand-list Birds, I. 1899, p. 37; Buturlin, Ibis, 1904, p. 398; Tegetmeier, Pheasants, 1904, p. 160 (race of *Ph. torquatus*); Grant and de la Touche, Ibis, 1907, p. 277; Grant, Ibis, 1908, p. 606.

Phasianus colchicus formosanus Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool., XXIV. 1917, p. 451.

FORMOSAN RING-NECKED PHEASANT

Phasianus colchicus formosanus Elliot

As the island of Formosa is over one hundred miles from shore, and as this pheasant differs from those on the neighbouring mainland only by the usually paler plumage, it is probable that it is more or less of a recent introduction. The cocks show considerable variation among themselves and the females are quite indistinguishable from the birds of the eastern Chinese Provinces.



FORMOSAN RING-NECKED PHEASANT.

MANCHURIAN RING-NECKED PHEASANT

Phasianus colchicus pallasi Rothschild

NAMES.—Subspecific: *pallasi*, after P. S. Pallas, 1741–1811, the eminent German naturalist and traveller. English: Manchurian Ring-necked Pheasant; Sungarian Pheasant; Ussurian Pheasant; Alphéraky's Pheasant.

TYPE.—Locality: The lower Sidemi River, Ussuriland. Describer: Lord Rothschild. Place of Description: Bull. Brit. Orn. Club, XIII. 1903, p. 43.

SUBSPECIFIC CHARACTERS.—This form differs from *karpowi* and *torquatus* in possessing a wider and quite complete white collar, and in the general lighter coloration of the plumage. From *hagenbecki* it is distinguished by the presence of a white spot under the ear-coverts, and the black margins of the breast-feathers are less distinct.

GEOGRAPHICAL DISTRIBUTION

NORTHERN and Central Manchuria, and Ussuriland from the Amur River south to the shore of the Japan Sea.

GENERAL ACCOUNT

A perfect volley of names has eclipsed this form, due to snap descriptions of single birds from uncertain localities. The Corean bird and Eastern Chinese Ring-neck seem to offer slight distinctions, but even *hagenbecki* living 1500 miles away to the west, across the whole expanse of Mongolia, is almost indistinguishable.

SYNONYMY

Phasianus colchicus Pallas, Zoogr., II. 1811, p. 83 (nec Linné 1758) "*varietas torque alba in Mongolorum desertis.*"

Phasianus torquatus Schrenck, Vög. Amurlande, 1860, p. 402 (partim); Radde, Festl. Orn. Sib. Or., 1863, p. 303 (partim); David et Oustalet, Ois. Chine, 1877, p. 409 (partim, var. "A"); Bogdanow, Catal. Avium Imp. Ross., I. 1884, p. 21; Taczanowski, Fauna Orn. Siber. Or., in Mém. Acad. St. Petersb., sér. 7, XXXIX. p. 785; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 331 (partim); Dresser, Manual Palae. Birds, 1903, p. 665 (partim); Grant, Hand-book Game-birds, II. 1897, p. 24 (partim).

Phasianus torquatus mongolicus Rothschild, Bull. Brit. Orn. Club, XII. 1901, p. 21 (nec Brandt, 1844). Later withdrawn by the author.

Phasianus torquatus pallasi Rothschild, Bull. Brit. Orn. Club, XIII. 1903, p. 43.

Phasianus hagenbecki Tegetmeier, Field, CI. 1903, p. 775; Tegetmeier, Field, CII., p. 232; Tegetmeier, Pheasants, 1904, p. 190.

Phasianus alpherakyi Buturlin, Ibis, 1904, p. 399.

Phasianus alpheraky ussuriensis, Buturlin, Ibis, 1904, p. 403.

Phasianus colchicus pallasi Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Nov. Zool., XXIV., 1917, p. 452.

Phasianus torquatus alpherakyi Ingram, Ibis, 1909, p. 461.

Przewalski writes that in the Ussuri Valley the pheasants are commonest about Lake Hanka, and the southern coasts of the Japanese Sea from Possiete Bay as far as St. Olga, and even further. They usually are found in the vicinity of cultivated land, where they feed on all sorts of grain, and do not even reject young potatoes, which they swallow whole. In the oak-forests pheasants were shot which had their crops full of acorns; and in the autumn the birds became very fat on this diet. In Ussuri the breeding season lasts until the end of June, and young were taken in early July.

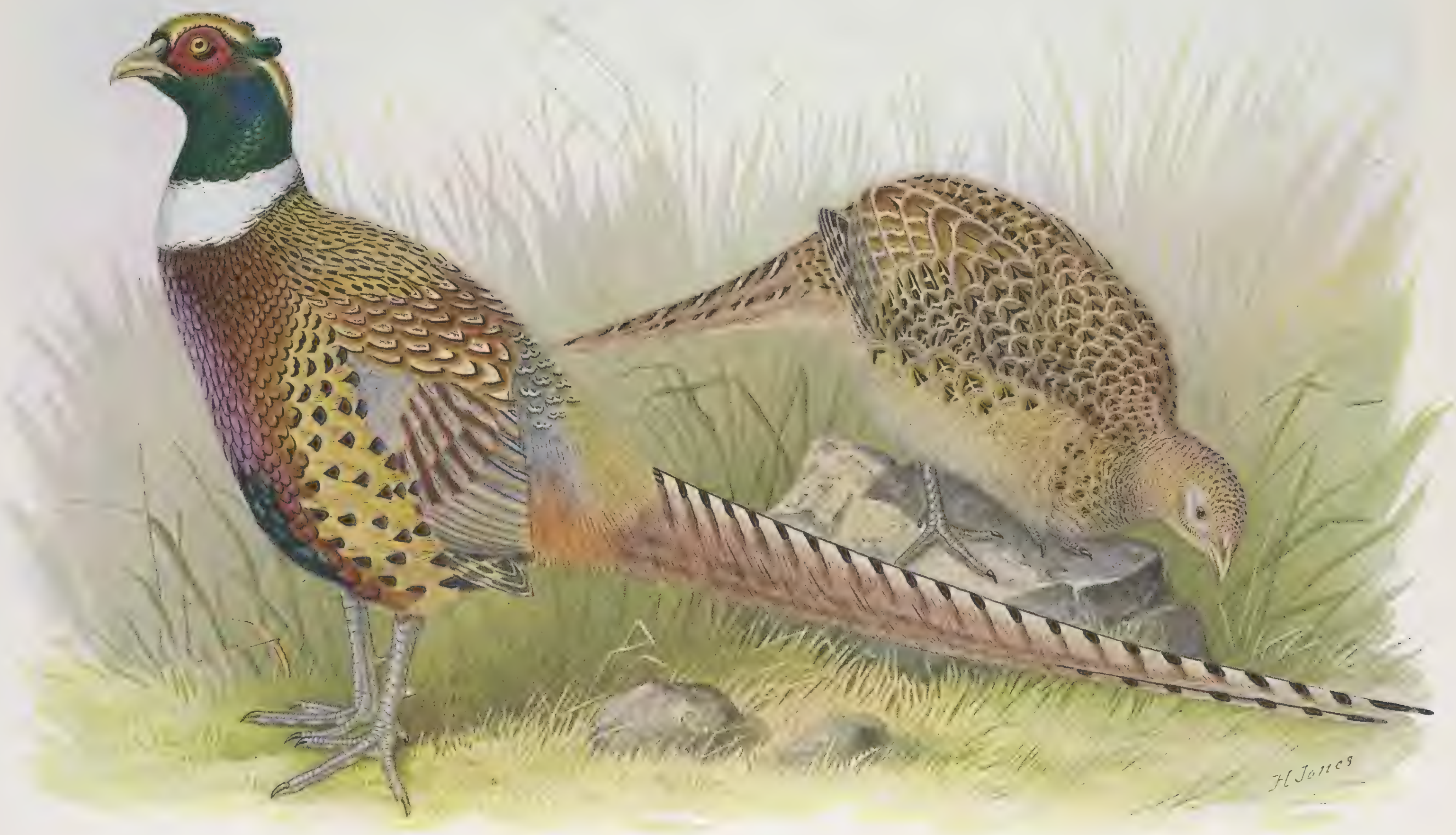
The few other notes which might be applicable to the life history of this form relate also to the several pheasants to the southland, and, indeed, so identical are the habits of these birds, that what may be recorded of one is true of all.

MANCHURIAN RING-NECKED PHEASANT

Phasianus colchicus pallasi Rothschild

THIS pheasant, from the far north-east of China, possesses the widest and most complete white collar. It is never found high up on the mountains, but usually on the more sheltered lower slopes or on the flat bushy plains.

PLATE LVII.



MANCHURIAN RING-NECKED PHEASANT.

KOBDO PHEASANT

Phasianus colchicus hagenbecki Rothschild

NAMES.—Subspecific: *hagenbecki*, after Carl Hagenbeck, the German live animal collector. English: Kobdo or Hagenbeck's Pheasant.

TYPE.—Locality: Kobdo Valley. Describer, Lord Rothschild. Place of Description: Bull. Brit. Orn. Club, XII. 1901, p. 20.

SUBSPECIFIC CHARACTERS.—Very close to *pallasi*, which occurs 1500 miles to the east, but usually lacking the white spot under the ear-coverts, while the black edges of the breast-feathers are wider. From *mongolicus* it is separated by only a single range of mountains to the west, but these pheasants are quite typical of the two groups, *hagenbecki* of the grey-rumped, and *mongolicus* of the red-rumped birds.

GEOGRAPHICAL DISTRIBUTION

EXTREME western Mongolia, in the Kobdo Valley, Karra-ussu, and the Achit-Nor, north of the Ektag Altai Mountains.

SYNONYMY

Phasianus hagenbecki Rothschild, Bull. Brit. Orn. Club, XII. 1901, p. 20; Tegetmeier, Bull. Brit. Orn. Club, XIII. 1903, p. 63 (in London); Dresser, Manual Palae. Birds, 1903, p. 666; Tegetmeier, Proc. Zool. Soc. London, 1903 (2), p. 2; Tegetmeier, Field, CI. 1903, p. 775; Buturlin, Ibis, 1904, p. 405; Tegetmeier, Pheasants, 4th ed. 1904, p. 190; Buturlin, Ibis, 1908, p. 580.

Phasianus colchicus hagenbecki Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Millais, Nat. Hist. Brit. Game-birds, 1909, p. 101; Hartert, Nov. Zool., XXIV. 1917, p. 452.

? *Phasianus alaschanicus* Alphéraky and Bianchi, Ann. Mus. Zool. St. Petersb., XII. 1908, p. 452; Buturlin, Ibis, 1908, pp. 452, 579.

COREAN PHEASANT

Phasianus colchicus karpowi Buturlin

NAMES.—Subspecific: *karpowi*, named in honour of A. W. Karpow, who collected the type specimen. English: Corean Ring-necked Pheasant. Japanese: Korai-kiji (Corean Pheasant).

TYPE.—Locality: Te-lin, Southern Manchuria. Describer: Buturlin. Place of Description: Orn. Monatb., XII. 1904, p. 3.

SUBSPECIFIC CHARACTERS.—Very close to *torquatus*, but with the flank-feathers darker, more of a golden-brown.

GEOGRAPHICAL DISTRIBUTION

SOUTHERN MANCHURIA throughout Corea, and in the island of Tsushima. In Manchuria it extends as far north as Kirin. I have a specimen from Chaoyang in Chili, which is typical *karpowi*, except that the sub-aural white spots are very faint. This form, doubtless, merges with both *pallasi* and *torquatus* at certain points of contact.

GENERAL ACCOUNT

In answer to a series of questions, Mr. Roy C. Andrews has kindly given me an excellent summary of his knowledge of these birds. He says, "In southern Corea I hunted pheasants at Ulsan, forty miles north of Fusan, on the east coast. The country there consists of a succession of hills from fifty to five hundred feet high with narrow and deep valleys between. The hills are of red and yellow clay with but little rock, and are covered on the sides with bush-firs from two to four feet high. The summits of the hills are frequently sparsely wooded with fir-trees ten to twenty feet high. The valleys are almost always of terraced rice paddys; along the edges there are pools and streamlets and also a considerable amount of standing water in the paddys themselves when the days are warm enough for the ground to thaw. The pheasants were hunted during January and February, and at this season were always found on the side of the hills and in the low bush-firs, and seldom, if ever, on the summits.

"During these months the Corean Pheasant gave no call; no sound of any kind was uttered by either the male or female. In the spring, however, I was told that the pheasant is continually crowing.

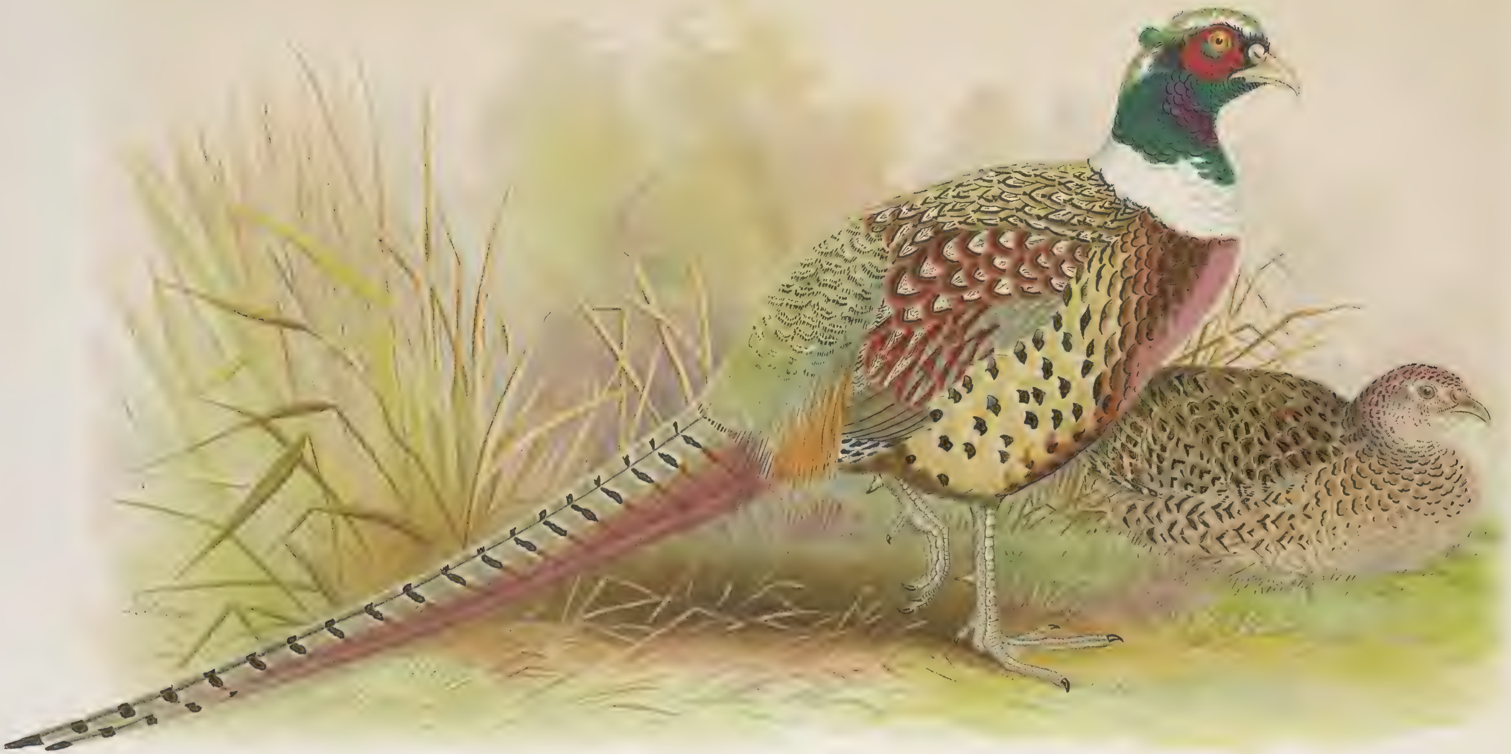
"I have never witnessed fighting on the part of the males or seen any evidence of it. The heat of the day is spent in the cover of the low bush-firs on the ground, and it is impossible to flush the birds during the middle of the day. I have repeatedly hunted them from twelve o'clock till three, and was never able to put a bird up, but later in the day, over the same ground, any number would rise.

"The flight is a succession of rapid wing-beats, followed by intervals of sailing.

KOBDO PHEASANT

Phasianus colchicus hagenbecki Rothschild

Little is known of this form from the Kobdo valley. It very closely resembles *pallasi,* fifteen hundred miles to the east, while to the west it is separated from *mongolicus* by only a single range of mountains, yet it differs radically in colour from that form.



KOBDO PHEASANT.

When trying to get away from the hunter, they will always fly and not sail until some distance away. Invariably just before alighting they sail for several yards on set wings. They seem to fly fast, but in reality they do not. I could usually get them when within forty yards by aiming six inches ahead of the bird.

"The only noise other than vocal which I heard was the rapid whirr of their wings when rising.

"I believe that the pheasants really depend more on their eyes than on their ears for protection from enemies. I have repeatedly been walking across rice paddys with a man beside me talking loudly, and almost stepped on pheasants which were drinking under the edge of a terrace in my path; they could, undoubtedly, have heard me coming forty or fifty yards away, if they had been relying on their hearing. One time I broke suddenly through some thick underbrush, making considerable noise, and when I emerged I saw a pheasant feeding almost facing me not more than twenty yards away. The bird did not raise his head until I walked five or ten yards in its direction, when it suddenly straightened, saw me, and took to flight. I could cite numerous other instances which lead me to believe that the birds rely almost entirely on their eyes rather than their hearing.

"It is difficult to say what the effects of civilization have been on the pheasants in Corea. Since 1909 all guns have been confiscated from the Coreans themselves, and consequently they are not able to kill pheasants; but they trap and snare a considerable number. The foreigners in the various towns do a great deal of shooting, and annually kill thousands of pheasants. They are, however, still very plentiful, and I could not find that the foreigners believed that they were decreasing greatly in numbers. At Ulsan, which, by the way, was not an especially good locality for pheasants, I could always put up ten or fifteen birds in an hour's walk. In other sections I heard of forty or fifty pheasants being killed in a day with no difficulty whatever. The birds have evidently adapted themselves to deforestation, since the south and central parts of Corea for several hundred years have been absolutely denuded of trees. The pheasants were never found in the trees, wherever there were any, except at night. The greatest amount of shooting is done from September to April, but there is no legal protection at any time during the year.

"Once only did I put a pheasant out of a tree; this when it was quite dark and the bird undoubtedly asleep. It was a cock pheasant and alone. I have, however, flushed pheasants from the ground in the thick cover where they were undoubtedly sleeping. I should say that more frequently they roost on the ground than in trees.

"The birds always fed on the ground. In the early morning, from daylight until about an hour after sunrise, and in the afternoon, from 3.30 until sundown and a short time afterward, the pheasants were always to be found in the open rice paddys feeding and drinking; they would never feed where there was no water. They made no attempt at concealment at these times, but seemed to trust to their eyes to give them warning of danger. Usually, when any one passed by, the birds would flush a hundred yards or more away and fly up the hillsides to cover. If they had been fired upon they would frequently go into the trees on the top of the hill, but this was variable. Without exception, as soon as they alighted, they would begin to run and usually rise several hundred yards or more away when next flushed. When hunted, after having once been put up, they became very wild and always flew when the hunter was a long way off or else tried to hide. If the covey stayed together, the former course was usually adopted; if it broke up, single birds would trust to concealment. I always found it was much easier to get a shot when pheasants were in pairs or singly than when several birds were together. Two or three coveys which I hunted for several weeks in succession would split up and come together for a short time.

"In the crops of the pheasants I usually found rice, but frequently small red berries and other seeds. In the crop of one cock pheasant I found a grasshopper.

"The pheasants were never present in large numbers at Ulsan; ten or twelve together being the greatest number I have observed. They were quite as frequently found in pairs, or males and females together, singly, or four or five females or males. In fact there seemed to be no uniformity in their numbers at this time of the year. There appears to be no local migration.

"The flesh of the pheasant is white and rather dry. The Coreans themselves consider it to be a great delicacy, and at certain times of the year, especially New Year, pheasants bring a high price. The meat has rather a strong taste in some individuals, and I do not like it as well as the flesh of our own grouse.

"The Coreans and the Japanese very frequently make the long tail-feathers of the cock pheasants into little brooms for dusting and sweeping.

"One day I put up a covey of pheasants from the rice fields and they flew up a high hill so steep that I could not climb it from that side. I climbed the hill from one side and rolled several stones down in order to put the birds up; suddenly I looked about and saw a slight movement about twenty feet away under a bush; it was a cock pheasant's head, and as soon as the bird saw I had discovered him, although I did not move, he flew up and passed a few feet in front of me. Another time I was walking up a hill and saw a slight movement in the bushes not more than five feet away. A cock bird was running along trying to hide and flew as soon as I looked around; I had passed close to it several times before. The pheasants were very hard to kill and could carry away a good deal of shot. No. 3 or 4 would stop them when not more than thirty-five yards from the gun. They were without doubt the finest birds which I have ever hunted."

In north-east Corea, between the Tumen and Yalu Rivers, Mr. Andrews found the same pheasant, *karpowi*, not nearly as abundant as in the south. "In this section of the country the hills range from five hundred to two thousand feet in height, and are sparsely wooded with oak and birch. Along the course of the rivers, large areas of the valleys and hills are under cultivation, and near these pheasants were found.

"I arrived in early April, and snow flurries continued from this date up to the 1st of June; it was cold at night, but quite warm in the daytime. Pheasants were found along the cultivated areas on the hillsides, but seldom in the bottoms of the valleys, except in the early morning or late afternoon when they came down to drink. No rice was growing in these fields, but quantities of millet and some oats. The pheasants were feeding to a large extent on millet, and also on small red berries. I found some grasshoppers in the crop of one cock bird. The birds were difficult to put up during the day, but could be quite easily flushed in the morning while drinking.

"The voice of the male is a short crow consisting of three notes, *cuk-cuk-cuk*, very

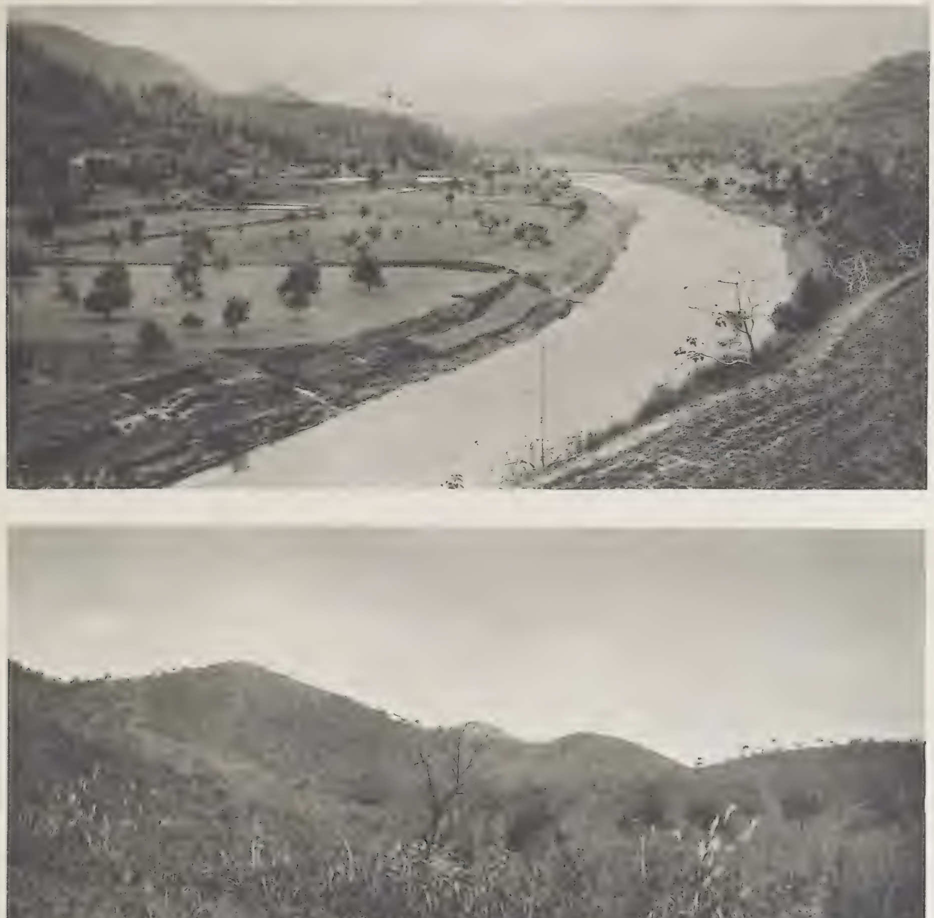
RING-NECKED PHEASANTS IN EASTERN CHINA

Phasianus colchicus pallasi Rothschild

The pheasants of north-eastern China come down once a day to the rivers or creeks to drink, and then make their way back to the rolling grassy slopes where they nest and roost.

There were two nests of Ring-necked Pheasants in the grassy tangle foreground of the central photograph.

A full-grown cock pheasant is hidden in the centre of the lower photograph, the beak, white collar, back and upward-pointing tail feathers distinguishable. Although so brilliantly coloured, yet when partially hidden by the grass its patterns and hues merged perfectly with the lights and shadows of the vegetation. The bird did not flush until approached within a few yards, when it rose with a roar of wings, shot almost straight upward for thirty feet, and then off along the hill in the central photograph. Two hens were sitting on eggs close by.



RING-NECKED PHEASANTS IN EASTERN CHINA

high-pitched and capable of carrying a long distance. In the early morning the birds crowed continually at regular intervals. When hunting them I always tried to locate the sound, but when I approached within a hundred yards of any particular bird, it usually stopped crowing. The sound carries to such a distance that it is rather difficult to locate the bird exactly, but if I managed to flush him, the cock would start up with a loud, rapidly repeated cackle. This was only uttered, however, when first starting from the ground, and after flying a hundred yards or so the bird generally was quiet. The effect of this noise and the whirr of wings as the great bird came out of the grass was decidedly disturbing. This cackle when flushed, and the crow given in the morning, were the only two notes that I heard from these northern pheasants. The birds always crow more continuously in the morning than in the evening.

"I never found them roosting in the trees in northern Corea, but frequently put them up from the ground in thick woods, although their general haunt was on the edge of cleared spaces just within the trees and long grass. I never heard the female give a call or note. As in the case with the pheasants of the south, the birds feed early in the morning and late afternoon, and seldom in the middle of the day. Since there were none of the small bush fir-trees and a great deal more forest in the north than in the south, the conditions under which the birds were living were quite different, nevertheless, they were always found upon the ground, and, as I have said above, near the cleared spaces.

"I was not able to get any data as to the nesting habits of this bird, although I promised the Coreans a yen if they found a nest. They all said it was very difficult to do and that they seldom found one."

SYNONYMY

Phasianus torquatus Taczanowski, Fauna Orn. Sib. Or. in Mém. Ac. St. Petersb., sér. 7, XXXIX. 1893, p. 788 (partim); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 331 (partim); Bianchi, Matér. Orn. Mandchourie, in Ann. Mus. Zool. St. Petersb. VII. 1912.

Phasianus karpowi Buturlin, Orn. Manat., XII. 1904, p. 3; Buturlin, Ibis, 1904, p. 406.

Phasianus colchicus karpowi Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Hartert, Novitates Zool., XXIV. 1917, p. 452.

Phasianus karpowi buturlini Clark, Proc. U.S. Nat. Mus., XXXII. 1907, p. 468; Buturlin, Ibis, 1908, pp. 579–584.

Phasianus torquatus karpowi Ingram, Ibis, 1909, p. 461.

Phasianus karpowi karpowi Clark, Proc. U.S. Nat. Mus., XXXVIII. 1911, p. 155 (Korea).

EASTERN CHINESE RING-NECKED PHEASANT

Phasianus colchicus torquatus Gmelin

NAMES.—Subspecific: *torquatus*, Latin, adorned with a collar. English: Eastern Chinese Ring-neck; Gmelin's Pheasant. Chinese: Teh-chi (Wild Chicken); Shan-chi (Mountain or Hill Chicken).

TYPE.—Locality: South-east China. Describer: Gmelin. Place of Description: S.N. I. pt. II. 1788, p. 742.

SUBSPECIFIC CHARACTERS.—The white collar is usually interrupted in front, and is much less wide than it is in *karpowi* and *hagenbecki*, while it is, in turn, wider and more distinct than in *strauchi*, and the nearest individuals of *decollatus*. The flank feathers are usually darker and richer in colour than in *formosanus*.

GEOGRAPHICAL DISTRIBUTION

EASTERN and south-eastern China from Canton to Hunan, north to the Lower and Middle Yangtse, up river at least to Ichang; north to Pekin, Kalgan, and the Ordos country. It doubtless interdigitates with *karpowi* in some northern district, and with *strauchi* and *decollatus* in the west.

GENERAL ACCOUNT

This, the last form of *Phasianus colchicus* to be discussed, shares with the first—typical *colchicus colchicus*—the fact of being very widely known. The Chinese Ring-neck has been introduced all over the world and has thrived in every temperate climate of Europe and America.

In its native haunts it has by far the widest distribution of any form. Many attempts have been made to divide it into subspecies or even species, but my experience in shooting along the Lower and Middle Yangtse, on the Min River inland from Foochow, and south of Pekin, has compelled me to consider these as individual variations. I have already told of the unreliability of rump colouring, and the breadth or narrowness or absence of the white collar in specific differentiation of these birds.

I spent several months in various parts of Eastern China, and had abundant opportunity of observing the habits of the Ring-necked Pheasant. Several gentlemen went to great trouble to furnish me with the data which I was unable personally to obtain. Among these, Mr. Charles R. Maguire of Wuhu, Mr. Herbert Kyne of H.M.S. Cadmus, and Mr. H. T. Wade were especially kind and able to give excellent pictures of *torquatus* as they had observed it from both a naturalist's and a sportman's point of view. My heartiest thanks go to them.

The conditions of life, general habits and ecological environments of the pheasants as we find them in the Lower and Middle Yangtse region is very typical of their near relations to the north and west, and to attempt correspondingly a picture of the numerous other subspecies would be to duplicate almost all of the facts.

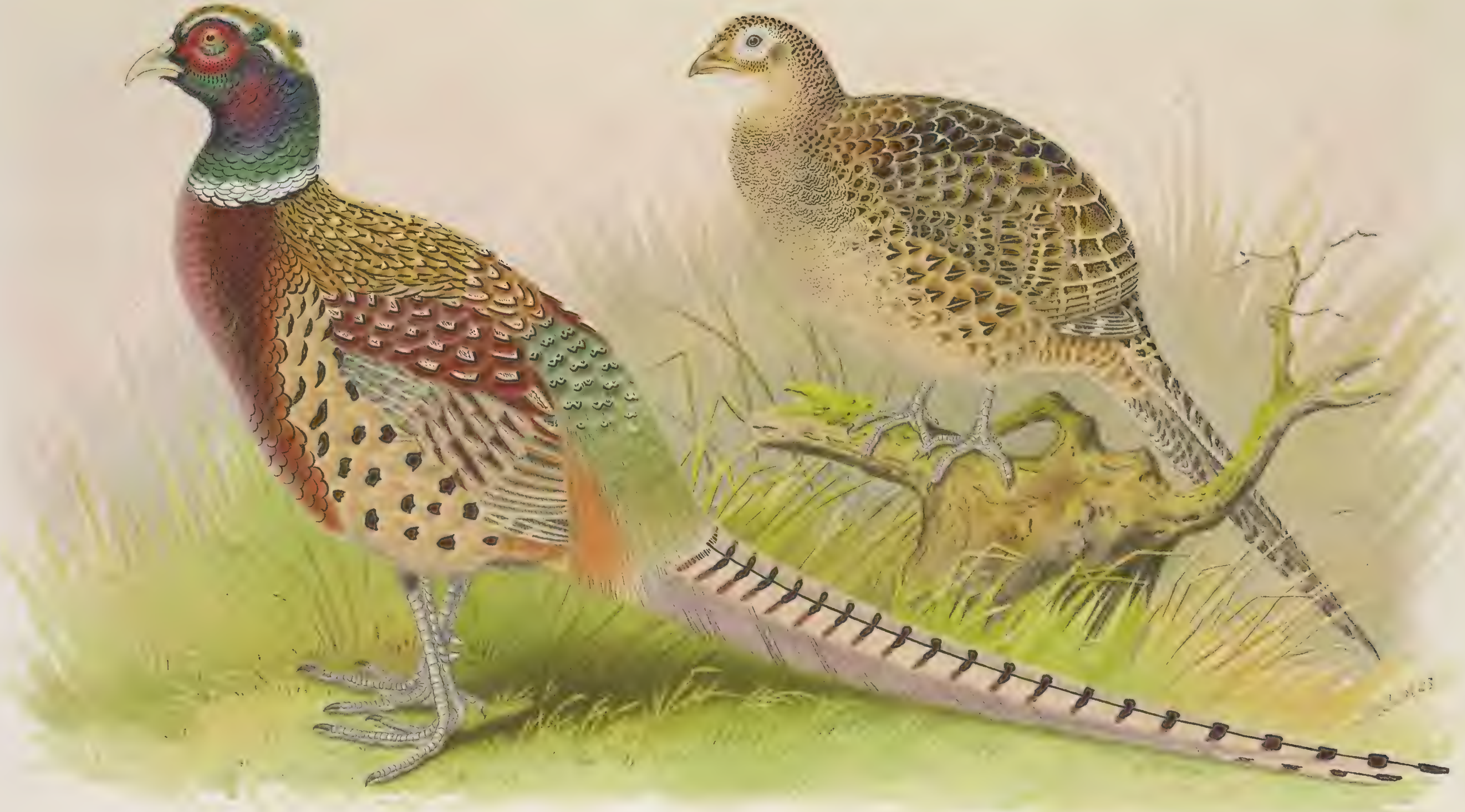
EASTERN CHINESE RING-NECKED PHEASANT

Phasianus colchicus torquatus Gmelin

This is the Ring-necked Pheasant which has been introduced so widely into America and, especially in the west, has increased so that it has to be kept down to prevent damage to crops.

Its habits in general throughout the east of China, from Pekin to Canton, differ not at all from those of the birds in our own country. They feed morning and evening, rest during the middle of the day, roost on the ground, lay six to twelve eggs on débris in grassy or shrubby places. The young birds acquire the adult plumage the first autumn. As many as eighteen hundred have been shot in twenty-three days on the Yangtse.

PLATE LIX.



EASTERN CHINESE RING-NECKED PHEASANT.

The Ring-necks inhabit three general types of country: first, dense reed-beds along river banks; secondly, low rolling hills covered with scrub oak, chestnut and pine, or dense grass undergrowth; and third, the flat paddy fields.

The reed-beds are regular reed forests, reaching a height of sixteen feet, and while standing, they afford a safe home for the greater number of pheasants in the region. The birds come out to feed about the paddys of rice, wheat or millet which always border the reeds, or feed upon the insects, roots and seeds among the reeds themselves. The seeds come chiefly from the creeping vines which abound on the reeds.

By the end of January the shelter afforded by these giant annuals has ceased to exist. The reeds have been cut down, stacked, or sent away by sampan or junk as articles of fuel or thatching. When the completion of reed-cutting is approaching, and the vast expanses of "forest" are reduced to workable dimensions, the biggest rises of beaten-out pheasants are obtained by sportsmen. Plenty of guns and beaters are needed, and as many as forty or fifty birds will break cover at one time, not counting odds and ends of pioneer or laggard singles. Until thus reduced by cutting, the reed forests are impossible for driving or shooting.

The rolling hills, one or two hundred feet high, so characteristic of Eastern China, are either close to the river banks, or standing back from them beyond the padded flats. They are interspersed with small farms, surrounded rarely by a few trees. Small bamboo plantations alternate with tangles of brier or scrub pine. Hardly ever is one out of sight of graves.

The slopes of the hills are everywhere terraced and cultivated, and here, through all the shooting season, or as long as the undergrowth remains standing, the best hunting is to be had. The pheasants give good high and crossing shots, while in addition, the beaters usually flush woodcock, quail, deer and hares. The pheasants are usually to be found around the lower areas, near the edge of the paddys.

The paddy flats include not only the actual rice beds, but the flat country where wheat and rape are grown. This is the dominant type of country about the lower Yangtse, and it probably provides the greater percentage of food of the pheasants. After the crops have been cut in the late autumn, the paddys are quite bare and remain so until the new growth appears in the following spring, about the 1st of March. But throughout the winter, unless the natives have grubbed the very roots for fuel, there is standing grass on the dividing ridges between the paddys, and even these narrow ribbons of vegetation afford ample cover for a bird with such remarkable powers of concealment as the Chinese Ring-neck.

In scrub-covered, hilly regions the cocks seek the densest bamboo cover during the heat of the day, while the hens seem rather to choose long grass. This latter choice may result from the grass affording better hiding-places for the young, and perhaps a greater abundance of insects and seeds.

One of my correspondents tells of finding as many as eight hens with young in a comparatively small patch of grass during a July which was a record hot month in a record hot year. The hens did not go far, but, as they left, called to the young remaining behind in the grass. The young did not rise, but after a period of quiet, several dozen made their way out of the grass and up a little bank into the bamboo scrub where the hens had concealed themselves, and where a number of cocks were resting.

In the autumn the birds often spend the middle of the day on the top of the low hills, and feed in early morning and late afternoon. Choice of locality in general depends upon suitable feeding for the particular season, freedom from attack by ground vermin, and presence of concealing shelter.

The voice of the Ring-neck differs in no way from that of its relatives to the west and north, and but little from the calls of our domestic fowls. In the spring the cock pheasant summons his mate or mates to share or appropriate some especially delectable morsel of food. The accompanying movement is a picking up and dropping of the food, thus calling it to visual attention, while, at the same time, a low chuckle or crooning sound is uttered.

When suddenly frightened, and during the first few frantic wing-beats, a loud, piercing cackle or series of squawks is given. As a complete antithesis, when the birds are settling quietly down for their night's roost, a sweet, low, content song is sometimes given with closed bill. The challenge crow of the cock is the familiar *kok-cack!* repeated several times, usually with the accompanying wing whirr. This latter is less developed than in the silver and kaleege pheasants, but is constantly used, not only in connection with the challenge and mating call, but to express emotion, such as suspicion or curiosity.

Young cocks of the year begin, weakly and tremulously, to crow about September, and attain their vocal goal in October, in which month they begin more or less sham combats with their fellows.

From the end of February to June the cock pheasants crow at daylight. Later in the morning the call changes to a lower cackle, apparently a summons to the hens, or guiding call to the feeding-grounds. During the heat of the day the birds are silent. From August to the end of October occurs another vocal season.

The alarm note of the hen, given at the sight of hawks or kestrels, is similar to that of a bantam, and the chicks vanish at once. The cluck of reassurance or summons to food is low, but not unlike that of a domestic hen. All notes are given on the ground, except when a bird is suddenly frightened from a tree, when it gives voice to the wild staccato cackling, expressing great fear.

The chicks eat little for the first day or two, and then they are usually led to low grass or dead leaves, where an abundance of small spiders and insects furnishes the primary diet. After about ten days, succulent young grass and the tops of young rice may be found in their crops, but not until after six weeks do they take seeds of grass and weeds. The mother chooses a well-concealed spot for the nightly shelter, and spends no two nights in the same place. If one or more rotten eggs in the nest happen to get broken, the hen may return to the vicinity for a few days, attracted by the swarm of flies and other insects drawn by the odour of the yolk. But the odour of the newly emerged brood is in sharp contrast to the total lack of scent of the sitting bird, and the danger of weasels being attracted is too great for any continued remaining in the vicinity. Little by little, as the young become stronger, they are led toward the hill-sides and denser cover, and then the dewdrops cease to provide sufficient moisture, and the daily trips are inaugurated to the nearest water supply. In some cases, at least, the hens of a certain district left their broods once or twice a day to fly alone to water for a short drink.

During the period of extreme youth of the brood, the hen, when suddenly flushed, flies off with a roar of wings and a warning cackle, which the chicks understand perfectly. They run, scattering in every direction, and after a long period the low cluck of the mother is heard, summoning them. They creep, never run, towards her, and even in the short grass are almost impossible to detect. Now and then her cluck will continue for an hour or more after the chicks have reached her. Whether this is from sheer emotional impetus, or from knowledge of a single chick which has not, and perhaps never will, find its way to her, is an open question. Usually the chicks obey swiftly, and in a few minutes the whole family has moved off to safer quarters.

After such an experience, if one throws a small stone in the direction the pheasants have gone, the slight but unusual noise will call forth the warning call, the chicks will scatter, but the hen will not fly, merely crouching flat, waiting to see if more immediate danger threatens.

A hawk or eagle will cause a crouch, and if the danger becomes acute, the hen flies at once and dives into the thickest cover. I have several accounts of hens which have stood up to the attack of a small hawk and covered the retreat of their young.

Young hens lay fewer eggs than those a year or two older, but the general number runs from six to twelve. The birds sometimes breed twice, and if the last nest is destroyed, another may be made very late in the year. Where Ring-necks are very abundant, and the number of the cocks has not been reduced by shooting, the breeding may be very irregular and extend over a considerable period of time. At an altitude of nine hundred and fifty feet a nest with three eggs was found on February 17, 1910, but this is an unusually early date, and disastrous in this case, for the succeeding March was bitterly cold with heavy falls of snow. April, May and June are the hatching months. On the other hand, young birds hardly able to fly have been recorded at the end of November, and Maguire writes, that "on Christmas eve, while walking the eleven miles from Tung Ling to Tatung, in the province of Anhwei, I came upon a young brood with not a single bird larger than a bamboo partridge, and which flew with great difficulty, upon receiving the hen's signal to scatter."

Owing to the omnipresent cultivation in many parts of Eastern China, the vegetarianism of the coolies, and the excellent shelter and abundant food, pheasants occasionally become so abundant that the normal safeguards are destroyed. Cocks may become so numerous in a locality as to interfere seriously with the breeding. They disturb the hens while sitting on the eggs, and often acquire the egg-eating habit, if they do not indeed actually kill young birds. Two cocks have been observed to fight so fiercely and continuously, that they have driven a hen from the nest and smashed all the eggs.

The fighting begins in open years about the end of December, and may last until June. One observer tells of four pairs of cocks going fast and furious within an area of a few yards. The victor crows once or twice and flies off immediately, not waiting to take on a second opponent.

When feeding the head is raised every second or two, bringing the senses of sight and hearing into play. When concealed near feeding birds, the snapping of a single twig will bring the whole covey to attention with a sharp whistling warning, while the slightest crunch of a foot on the gravel will send every bird into a crouch. They are now absolutely motionless and silent, and at the next hint of danger the cocks are up and away with a rushing whirr of wings, while the hens may wait for still another threat, trusting to their perfect resemblance to the grass and dead leaves.

The keenness and accuracy of their sense of hearing is proven by their avoidance of the direction of a suspicious sound, no matter how low it may have been, and how completely concealed its author. Their eyesight, in turn, is superb, and a cock in full flight will swerve at the least glint of a gun barrel, when nothing else is visible. Hunters who have dressed in white, and attempted to stalk pheasants in the snow, have found that they would be detected a hundred yards away, the cocks running rapidly up the hill-sides and watching their pursuers from the summit.

Like the crows of our cornfields, Chinese pheasants soon learn to distinguish between harmless coolies and hunters. They will feed and walk about in full view of a gang of working coolies, and be off like a shot at the approach of a man with a gun.

While the deforestation of the country and the development of paddy cultivation actually favour the increase of pheasants, the compensation lies in the correspondingly greater number of foreign so-called sportsmen, who go out from the cities in crowds and bring back large bags of hens. Their lack of sportsmanship prevents them from trying to distinguish between the sexes when the birds rise, and their lack of skill makes the slower rising and flying hen their prey, while the wary, swift cock more often escapes. The pot-hunting Japanese and Macao Portuguese also account for a vast number of hens.

Especially where persecuted, Ring-neck Pheasants are masters in the art of detecting and avoiding danger. The cocks can rise almost vertically from a patch of reeds or grass and with a few rapid wing-beats attain a terrific speed, which carries them far out of danger. On the other hand, they know when it pays to risk hiding. George Lanning has given a vivid account of this in a Shanghai newspaper, where, as he says, it would seem utterly impossible for a cock pheasant to hide himself amongst a few tufts of dead winter grass. Yet a bird can vanish in such a place as completely as if the earth had opened and swallowed it up. The plumage of the pheasant contains spots or splashes of red, blue, black, green, brown and yellow. The two latter shades are common enough among the blades of grass and straw, the reds are present in stalks and ground leaves, the greens are always present in the evergreens, while the blacks and dark blues may represent the shadows and dark places between the stalks and under the leaves of the plants. Yet with all this understandable colour logic, the disappearing pheasant is as wonderful as ever.

Mr. Wade records a bag of eighteen hundred and one pheasants made in twenty-three days at Ewo, shot over dogs in open fields. Lanning says, that "the cream of the shooting is to be got perhaps a little before Christmas; a great deal depends on the condition of the crops. My best time amongst the long-tails happened one year, after Christmas, in a piece of country along the Grand Canal, between Kahshing and Soochow, where at ordinary times one rarely found anything. On this occasion, however, for some reason or other, a few patches of paddy had been left, the only ones apparently in the whole district, and to them pheasants from far and near had been attracted.

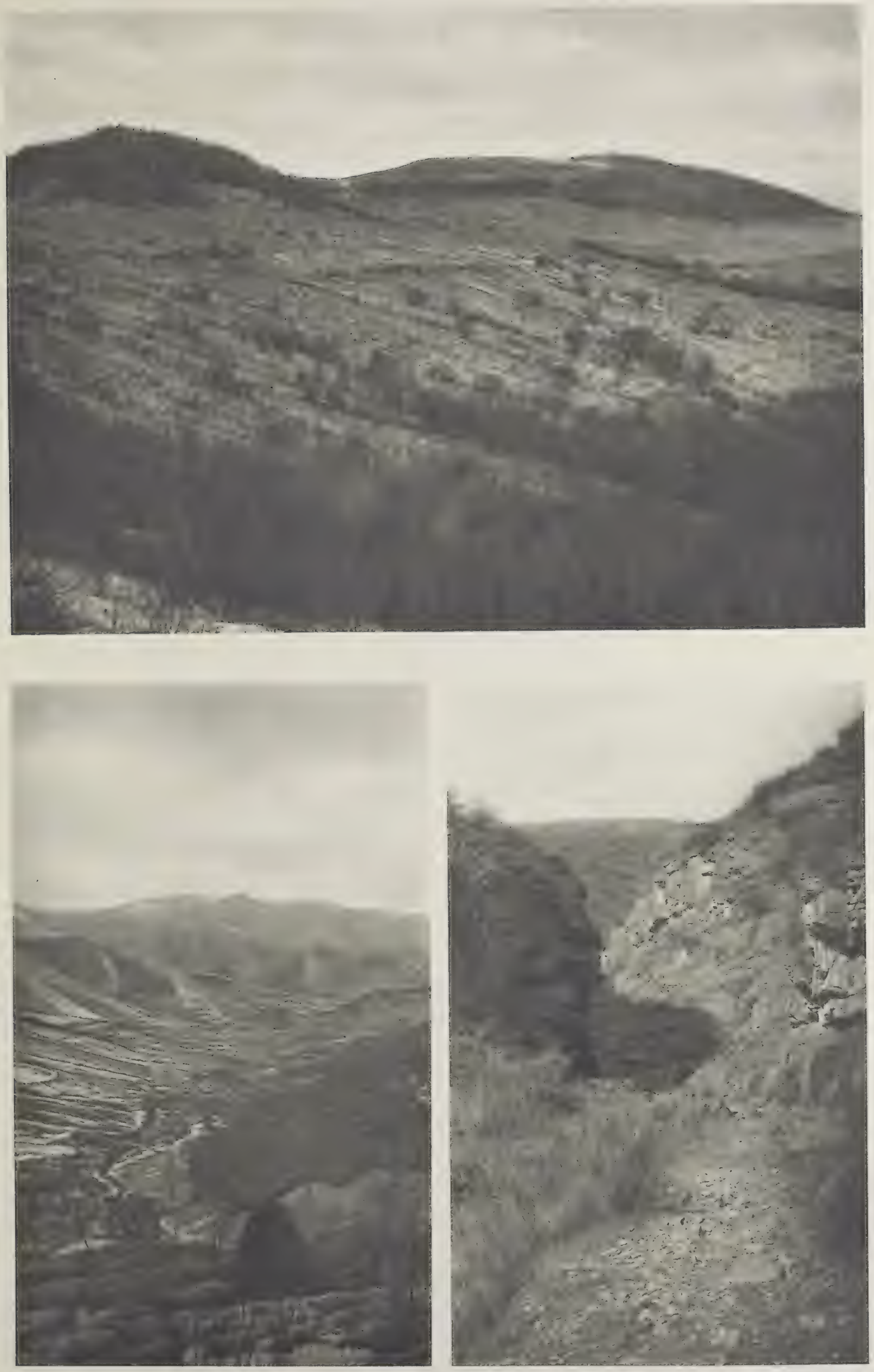
"In a couple of hours before sunset, and another couple of hours next morning

THE BLEAK LAND OF CHILI, NORTH-EAST CHINA, HOME OF THE RING-NECKED PHEASANT

Phasianus colchicus torquatus Gmelin

THE common Ring-necks inhabit three general types of country, dense reed-beds along river banks, low rolling hills covered with scrub oak, chestnut and pine, or dense grass growing in irregular patches, and the flat paddy-fields.

Double broods are sometimes reared, the great majority of the chicks falling victims to rats, civet cats, foxes and weasels.



THE BLEAK LAND OF CHILI, NORTH-EAST CHINA.
HOME OF THE KIANGSU RING-NECKED PHEASANT

twenty-five birds were collected to a single gun. With a party directed with some regard to strategy there might have been a very good bag made on that occasion, for pheasants were as plentiful as one could remember them within a dozen years after the end of the Taiping rebellion. Then whole bouquets of birds might be put up out of favourite pieces of cover, reeds, bamboos, or what not. In the morning they might be seen running ahead of sportsmen till they had reached what they thought a safe distance to rise, or disappeared altogether in cover. Shooting was comparatively easy in those days, and little was looked at but pheasants, deer, hares, pig, and such waterfowl as got up from creeks and ponds. Native hunters were few and far between, and there was not the market demand there is now.

"Since pheasants feed in the early mornings and evenings, it follows that the best shooting is not to be got at those times, but during the middle part of the day, when, after a satisfactory breakfast—and pheasants have quite as good an appetite as other birds—they are lying up for the siesta. Sometimes cocks and hens go up together, but more often they are found separately. Cocks particularly, if alone, seem to have a special liking for little clumps of young bamboos: hens, on the contrary, love a warm, grassy bank such as might otherwise contain quails. But it is not wise to attempt too exactly to define likely places, for the pheasants at times seem ubiquitous, and will rise from the middle of an open field as readily as from the most tempting cover. In common with partridges they appear to like a drink of water during the heat of the day. It will not, of course, be news to the experienced sportsman when he hears that the pheasant swims well. That, however, is a fact at which the beginner may be surprised. I have seen on two or three occasions winged birds trying to save themselves by swimming across creeks, when their motion is similar to that of the moor-hen, the head going backward and forward in time with the movement of the feet. Some men declare that they dive.

"Their running powers are well known. A hard chase after an old cock is not a bad test of the wind of the sportsman without a retriever. Once it was my fortune to lose a fine bird notwithstanding the fact that I had a pointer. She was old, however, and as the bird had a good start she actually got off to cover a good seven hundred yards away, the dog giving up the chase. On two occasions our winter visitors, the so-called 'Bromley' kites (a corruption of 'Brahminy') have unintentionally retrieved birds for me, or rather have shown where they were, by their persistent attack on them. When unhurt, a cock pheasant thinks nothing of the swoop of these gentry, but it is otherwise when he has been hard hit."

The Yangtze Valley Ring-necks roost upon the ground, even where there are suitable trees, but in regions where ground-vermin are abundant the pheasants are driven into whatever shelter they can find. Under such conditions the cocks are sometimes found in the crown of the scrub oaks, dwarf oaks which have been trimmed and cut for firewood, and whose thick central butt, pollard-like, has sent out thin shoots all around. In the spring these slender shoots are brightly coloured and completely conceal the brilliant hues of a cock pheasant's plumage. Several hens will come night after night to some favourite bank of moss among a thin growth of pines, and squat close together. In the reeds of the river-banks large covies find shelter in close proximity.

In rocky regions, the pheasants, on cold days of early spring or late autumn, often bask in the sun among boulders on the sheltered slopes of hills, and in hotter weather their favourite midday occupation is taking dust-baths in the sun, or preening their feathers and dozing in the shade of overhanging foliage.

The food of Ring-necked pheasants varies with the seasons. A summary of crops examined reveals a diet somewhat like the following—

January: chiefly hibernating insects and grubs, especially toward the south, with a little seed.
February: insects and young spring greens, with very little seed.
March: grubs and green food.
April: greens, insects and early spring grain.
May: adults, insects and quantities of seeds and grains; young, small insects and grit.
June: adults, dry grain, crops and greens; young, insects and greens.
July: grain and green food, toward the end of the month begin raids on rice-lands.
August: rice and greens; late in the month begin feeding in the bean-fields.
September: chiefly cotton-seed with greens and rice, becoming fat toward end of month.
October: chiefly beans, acorns, Spanish chestnuts, autumn seeds, buckwheat, etc.
November: acorns, cotton-seeds, rice gleanings, and the seeds and insects of the river reeds.
December: grubs and insects, acorns and beans, with very little cotton-seed.

North of the Yangtze where kaoliang, or tall millet, is grown, pheasants come in numbers around the threshing-floors, and at sundown, after the coolies have gone, they eagerly pick up the stray grain. They are very fond both of the tall and dwarf millet, and excellent shooting is to be had in the stubble-fields of these crops throughout November and December.

Ring-necks are polygamous, and cocks in the prime of life may have a harem of four to eight hens. In regions where hens have been indiscriminately shot off, the birds may be sometimes seen in pairs, and I believe that even under ordinary conditions some individual cocks are consistently monogamous, and care for their single mate and her brood.

Where young pines and firs abound, the favourite nesting-places will be found on the beds of soft needles, and second choice is usually in a dense clump of feather-grass. No nesting material is ever provided, the needles or grass stems being pressed down, or packed up by the weight of the bird's body into a rim of sorts.

The eggs deposited by wild Ring-necks number from six to twelve, with sixteen as a very unusual record for a single bird. Two broods a year are not unusual, but a third effort is due only to the early destruction of one or both of the preceding. The breeding period differs with the latitude, and there may be a month's difference in the average nesting of a Kalgan and a Foochow bird.

The chicks in general habits and life resemble those of other forms, and differ from domestic chicks chiefly in their greater wariness and activity. They bask in the sun, soon learn to hunt insects for themselves, rush to the protection of their mother's plumage at the approach of a hawk, or seek it more slowly when a cold wind chills them, or the dusk of early night closes down.

Among the worst enemies of the Ring-necked pheasants are the civet cats, all species working havoc among the birds. So quietly do the animals make their way and so suddenly is their attack launched that even the wariest cock bird seldom escapes. Foxes, racoon dogs and weasels are almost as dangerous, and they will destroy eggs as well as sitting birds. Wild cats have been recorded as killing pheasants, but young hares seem to be their favourite article of diet. Among the hawks, kestrels are to be numbered as especially dangerous to young pheasants, while eagles and owls take toll from the covies of adult birds.

The necessity for the large, often double broods is probably increased by the never-ceasing raids of great black rats and of crows. Both of these creatures hunt in couples or larger numbers, and both are bold and powerful enough occasionally to drive a pheasant hen from her eggs, especially if she is a young bird with her first nest. Rodents and crows then rush in and seize the eggs, the rats carrying them off in their mouths and the birds impaling them on their beaks. In a few minutes all the hopes of that pheasant home are blasted. Magpies fulfil a double rôle, valuable at times as friends, as we shall later see, and yet prone to temptation when a nestful of eggs is exposed.

The Chinese have a delightful belief in a crowing snake which they call She-kung-Chiao, with a head like the scarlet skin of a turkey. The snake is supposed not to crawl, but to gather itself together and spring ahead with successive leaps. As it progresses, it utters a crow so like that of the cock Ring-neck that the bird is attracted by its supposed challenge, and when sufficiently near, is seized and killed. The Chinese are in mortal fear of this marvel, and when an unusual pheasant's crow is heard in a certain place, which they attribute to the reptile, nothing will induce them to approach.

While hardly to be classed as a friend, yet wild pheasants may often be seen feeding in close proximity to native dogs, and about farm-houses the two may be seen together with no signs of unfriendliness. The value of this association may possibly lie in the comparative absence of vermin, such as rats and weasels, where dogs are abundant. Magpies, however unconsciously, do the pheasants good turns, and many a shot have I missed, when stalking birds, by having one or a flock of magpies discover me, and lift their raucous voices to heaven, and to the ears of the pheasants.

Domestic fowls as well as pheasants are guarded by these chattering birds, and the Chinese housewife will often rush out of the house and bang loudly on a gong when she hears their chorus, thus summoning the flocks of fowls to safety, and alarming the approaching civet cat. The magpies flutter from bush to bush ahead of the creature they have discovered, occasionally barging down at him with an uproar of chattering, and making his life miserable until he succeeds in slinking away out of sight. The hunter fares no better when he has been unfortunate enough to attract the attention of a flock of these black-and-white busybodies.

There are laws, and very strict ones in their wording, in the Chinese code, for the protection of game-birds and animals. Some of these laws date from the time of the great Kublai Khan. Like most of the excellent laws of China, they are conspicuous for their non-observance. Under the law any coolie killing anything in the nature of game is liable to very severe punishment, and the killing of big game by those not authorized to do so is rewarded by decapitation. There were regular imperial huntsmen who were allowed to kill only a certain number of head in each district per year, and the killing of females was strictly prohibited. Hunting for big game and hawking for small game were reserved as imperial and princely pastimes. As things are at present, the birds are not protected from the most indiscriminate slaughter.

Pheasants are taken in many ways, the commonest being a very simple, but efficient, snare—a horse-hair loop fastened to a bit of bent bamboo. Nets of great extent are stretched across the sides of a field and the birds ingeniously driven beneath them, and then suddenly rushed, and flushed into the meshes.

Hens are captured alive, and at the approach of the breeding season are fastened by a short string to a stake. Food is scattered about just out of reach, and the hen in her efforts to reach the food cackles and waves her wings, thus attracting any cocks in the vicinity, who are shot one after the other, as they approach.

Ring-necked Pheasants are sold in all the treaty ports, chiefly to foreigners. In season they are sold openly, but where prohibited by local market regulations, they are sold and eaten as "Shantung Chickens," a very thin disguise for the Chinese name Shan Chi. Recently enormous numbers have been bought up by the agents of refrigerated ships, frozen and taken to Europe by the thousand. In November and December, from 48,000 to 60,000 pheasants are thus shipped from Hankow alone.

In some districts the Chinese seem to believe in a kind of dust spirit which can pass from a live pheasant when handled by a human being, and which has the power of producing a fatal illness, accompanied by coughing and fever. Dead birds may be handled without fear of this catastrophe. On the other hand, in certain parts of Shantung and Chili and the Chekiang hill districts, pheasants haunting the great extent of graveyards are thought to be the receptacles for the spirits of departed ancestors. The natives object strenuously to the shooting of birds in these places, and will steal and hide any wounded or dead birds which the hunter overlooks.

SYNONYMY

Var. *a*, *Ring Pheasant* Lath., Gen. Syn., II. pt. ii, 1783, p. 715; Lath., Suppl., I. 1787, p. 208; Lath., Gen. Hist., VIII. 1823, p. 190.

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Phasianus torquatus Gmel., S. N., I. pt. ii, 1788, p. 742; Temm., Pig. et Gall., II. 1813, p. 326; Temm., Pig. et Gall., III. 1815, p. 670; Leach, Zool. Misc., II. 1815, p. 13, pl. 66; Vieill., N. Dict. d'Hist. Nat., XI. 1817, p. 38; Steph., in Shaw's Gen. Zool., XI. 1819, p. 228; Griff., ed. Cuv., III. 1829, p. 22, pl.; Guérin-Méneville, Icon. Règ. Anim. Ois., 1829–38, p. 25, pl. 42, fig. 1; Less., Traité d'Orn., 1831, p. 495; Jard., Nat. Lib. Orn., IV. 1834, p. 189, pl. XIII. (Hybrid); J. E. Gray, Ill. Ind. Orn., II. 1834, pl. 41, fig. 1; G. R. Gray, List Birds, pt. iii, Gall., 1844, p. 23; Gray, Gen. Birds, III. 1845, p. 497; Blyth, Cat. Mus. As. Soc., 1849, p. 245; Gould, Birds Asia, VII. 1856, pl. 39; Schrenck, Reisen Amur-land, I. 1859, p. 402; Swinhoe, Ibis, 1861, p. 49 (Hongkong), p. 341 (Pe-chi-li); Sclat. and Wolf, Zool. Sketches, I. 1861, pl. 37; Lamprey, Proc. Zool. Soc. London, 1862, p. 221 (Shanghai); Swinhoe, Ibis, 1862, p. 259 (Foochow); Radde, Ost-Sib. II. 1863, p. 302; Sclater, List Phas., 1863, p. 4; Sclater, Proc. Zool. Soc. London, 1863, p. 116; Swinhoe, Ibis, 1863, p. 481; Swinhoe, Proc. Zool. Soc. London, 1863, p. 307; Milne-Edwards, N. Arch. Mus. Bull., I. 1865, p. 14; Swinhoe, Ibis, 1865, p. 349; Saurin, Proc. Zool. Soc. London, 1866, p. 436 (Amour, N. China, Corea); Swinhoe, Ibis, 1867, pp. 390, 402 (Cheefoo); David, N. Arch. Mus. Bull., III. 1867, p. 37 (Mongolia); Gray, List Gall. Brit. Mus., 1867, p. 27; Dybowski, Jour. für Orn., 1868, p. 337; David, Proc. Zool. Soc. London, 1868, p. 210; Gray, Hand-list Birds, II.

HAUNTS OF THE COREAN RING-NECKED PHEASANT

Phasianus colchicus karpowi Buturlin

Typical pheasant country in Corea consists of hills fifty to five hundred feet high, with warm and deep valleys between. The hills are of red and yellow clay with little rock, and are covered on the side with bush firs two to four feet high, while the summits are sparsely wooded with larger trees.

In some localities fifty birds may be shot in a day. In the rice districts the pheasants feed to a large extent on this grain and on millet and small red berries.

[illegible] covered

[illegible] are sparsely wooded with larger trees.

HAUNTS OF THE COREAN RING-NECKED PHEASANT

1870, p. 257; Homeyer, Jour. für Orn., 1870, p. 173; Elliot, Proc. Zool. Soc. London, 1870, p. 408; Hutton, Trans. N. Z. Inst., 1870, p. 80; Hutton, Ibis, 1870, p. 397 (New Zealand); Melliss, Ibis, 1870, p. 103 (St. Helena); Swinhoe, Proc. Zool. Soc. London, 1871, p. 398 (Canton to Pekin and Hankow); David, N. Arch. Mus. Bull., VII. 1871, p. 11; Elliot, Mono. Phas., 1872, II. pl. V. (text); Swinhoe, Ibis, 1875, p. 125 (Cheefoo); Taczanowski, Jour. für Orn., 1876, p. 201 (Ussuri); Taczanowski, Bull. Soc. Zool. Fr., I. 1876, p. 245 (Amour and Ussuri); David et Oustalet, Ois. Chine, 1877, p. 409; Prjevalsky, Mongolia, II. 1876, p. 114; Prjevalsky, in Rowley Orn. Misc., II. 1877, p. 385 (Hoang-ho, Ordos, Ussuri); Bolau, Jour. für Orn., 1880, p. 131 (Askold); Blakist and Pryer, Tr. As. Soc. Japan, 1882, p. 127 (Tsu-sima); Sclater, Ibis, 1882, p. 435 (Hankow, Tchang); Seebohm, Ibis, 1884, p. 267 (Kiukiang); Bogdanow, Consp. Av. Ross., fasc. I. 1884, p. 21; Seebohm, Zool., 1886, p. 225 (St. Helena); Seebohm, Ibis, 1887, p. 169; Lilford, Birds Brit. Ill., IV. 1885–97, p. 116, and col. fig.; Giglioli and Salvad., Proc. Zool. Soc. London, 1887 p. 584 (Corea); Taczanowsky, Proc. Zool. Soc. London, 1887, p. 610 (Corea), 1888, p. 467 (Mantchouria); Dörries, Jour. für Orn., 1888, p. 88 (Ussuri); Seebohm, Ibis, 1888, p. 313; Seebohm, Birds Jap., 1890, p. 369; Styan, Ibis, 1891, pp. 329, 499 (Lower Yangtze); Pleske, Bull. Acad. St. Petersb., XIII. 1892, p. 296; Seebohm, Ibis, 1892, p. 99 (Tsu-sima), p. 248 (Corea); de la Touche, Ibis, 1892, p. 493 (Foochow and Swatow Hills); Campbell, Ibis, 1892, p. 248; Grant, Cat. Birds, Brit. Mus., XXII. 1893, p. 331; Grant, Handbook Game-birds, II. 1897, p. 24; Harris, Field, XCI. 1898, p. 358; Housden, Avicult. Mag., V. 1899, p. 149; Grant, Ibis, 1900, p. 606; de la Touche, Ibis, 1900, p. 49; Rothschild, Bull. Brit. Orn. Club, 1901, XII. p. 21; Tegetmeier, Bull. Brit. Orn. Club, 1901, XI. p. 48; Oates, Cat. Birds' Eggs Brit. Mus., I. 1901, p. 37; Walton, Ibis, 1903, p. 32; Tegetmeier, Pheasants, 1904, p. 159; Kershaw, Ibis, 1904, p. 244; de la Touche and Rickett, Ibis, 1905, p. 57; de la Touche, Ibis, 1907, p. 16; Finn, Game-birds India and Asia, 1911, p. 58; Jones, Ibis, 1911, p. 683; J. M. B., Field, CXVII. 1911, p. 630; Gee and Moffett, Birds of Lower Yangtze Valley, 1917, p. 56.

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Phasianus gmelini kiangsuensis Buturlin, Ibis, 1908, p. 581.

GREEN JAPANESE PHEASANT

Phasianus versicolor Vieillot

NAMES.—Specific: *versicolor*, Latin, many-coloured. English: Green Japanese Pheasant. Vernacular: Kiji (Japanese).

TYPE.—Describer: Vieillot. Place of Description: Gal. Ois. II. 1825, p. 23, pl. 205.

BRIEF DESCRIPTION.—Male: Crown, nape, mantle, throat, breast and posterior underparts dark metallic green; neck all around rich purple; scapulars coppery red, and with the mantle black-centred and marked with concentric lines of buff; wing-coverts bluish slate changing to greenish on rump and upper tail-coverts; tail greenish grey barred with black and widely fringed with purplish; facial skin scarlet. Female: In general sandy brown, barred and marked with black; neck and upper mantle decidedly pinkish, the centre wholly black with a wide tip of metallic green; lores, chin and throat clear sandy buff; patch below eyes white; underparts buff strongly barred with black; tail pinkish buff, chestnut towards shaft, and barred with black and pale buff.

RANGE.—The islands of Japan except Yezo.

THE BIRD IN ITS WILD HOME

WRAPPED closely in one's blanket on the matting of a tiny Japanese inn, one is awakened by the warm sun's rays shining brightly through the rice-paper walls. It was good to shove these aside and creep out upon the diminutive verandah and there to thaw out the chill of the freezing February night. The water in a near-by pool had a skim of ice, and the field labourers going past were enswathed in all the clothing and kerchiefs they possessed. But by the time breakfast was over and I started upon my quest, with many bows and murmured flatteries to mine host, the air had the life and tang of early spring, which made one glad to be alive.

I crossed a creek by a long bridge, each span forming a fraction of a circle, and tramped for a half mile over the foot-paths bounding rice-fields, more or less under water. A slope led past long, double rows of bright green, sprouting barley, while here and there patches of clear yellow mustard glowed as if with a light of their own.

A backward glance showed a view far from wintry, although the frost still crackled in the hollows under our shoes. The Inland Sea, dotted with emerald islets, glittered beyond the line of fields. A diminutive farm-house to the left was overhung with feathery-fronded palms and a hedge of orange trees—the green foliage dotted with hundreds of full-sized fruit, like the lanterns of a tea-house during festival.

In the distance a pink and white mist revealed an orchard of plum trees in full flower, and even at this distance their perfume was strong on the air. Yet a few hours ago I was shivering in a sleety snowstorm straight from the white-enshrouded form of Fuji.

On and on I went, and at last reached a hillock rising abruptly from the cultivated plain. It was almost barren—the brown dead grass relieved only by a few stunted pines. No dwellings were upon its slopes—the earthquakes making such a situation

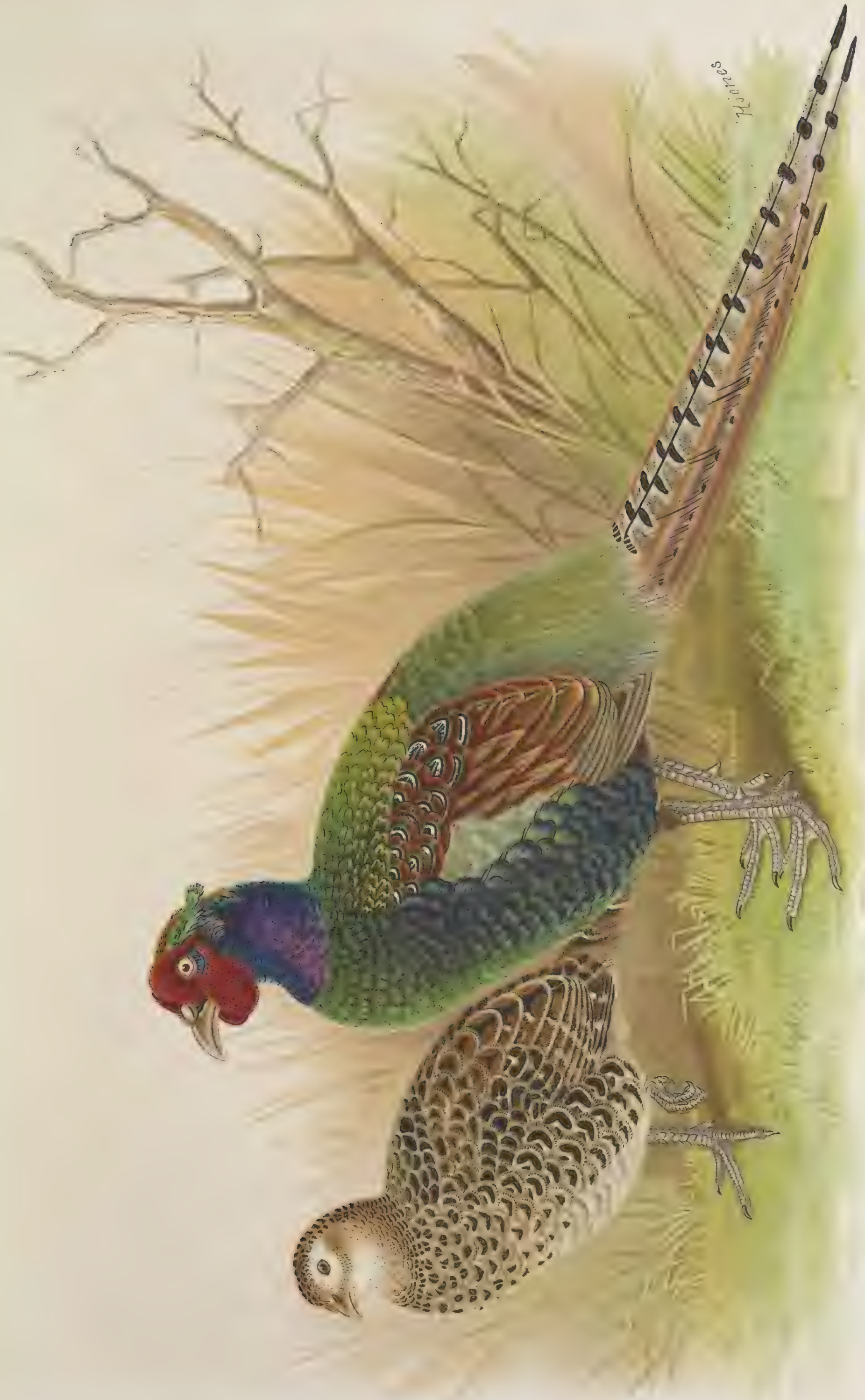
GREEN JAPANESE PHEASANT

Phasianus versicolor Vieillot

THIS is the second full species of its genus, found only in Japan, and showing remarkable little variation. As it prefers lowlands to the slopes of mountains, it is seldom found far away from the coast, and it chooses to visit the gardens of the farms rather frequently.

The last view I had of Kiji in their native home was on a perfect day in Kagoshima. I was returning from a long day's tramp after Ijima's Copper Pheasants, when for a few minutes a splendid cock Green Pheasant stood outlined at the summit of a gentle rise. The setting was: the deep blue waters of the bay, the pale blue of the sky, the clear green of graceful, aged pines, while over all towered the majestic, purpled cone of Sakuragima.

PLATE LX.



GREEN JAPANESE PHEASANT.

too dangerous. As I encircled it I now and then snatched a clean lettuce-leaf or a fragrant onion from the clean-weeded lines of vegetables. In the sheltered places the buzzing of early flies hinted of summer.

Suddenly I sighted a red flag waving frantically back and forth and near it distinguished several crouching figures. Approaching closer I found a picket of Japanese soldiery signalling to a distant hillock, where with glasses I discovered two or three companies of infantry with mounted officers.

Realizing that few pheasants would be found in the vicinity of sham battles I turned abruptly to the right and soon lost sight of the little yellow men whose game of war was working havoc with the vegetable fields of the poor farmers.

Everywhere I remarked the absence of cattle and horses, but soon realized that there is no pasture for them. Every inch of level or tillable soil is given up to farming, and the rice straw is all bundled and saved for roof thatch.

A rasping screech and a whirr of wings came from behind a pile of these bundles, and I flushed my first Green Pheasant. The sudden flight ended in the usual long scale to the ground. Walking rapidly upward, through dwarf pine and dead bamboo grass, I concealed myself in a pile of brush and there waited. The day was a perfect one, and the mellow earth gave forth the delicious odour of thawing warmth, which only the dweller in temperate zones can know and love.

A brown-headed shrike sat on a dead pine shrub and watched with me. For two hours he saw nothing edible, and for the same time I detected no pheasants, although the spring call of the males came clearly from two points not far away. Then I attempted to stalk them and failed to get even a glimpse. Such are the haunts of the Green Japanese Pheasants, and such was my first day among them.

GENERAL DISTRIBUTION

The Green Japanese Pheasant is not found in Yezo, neither in the smaller Kurile Islands to the north or in Tsushima or the southern Loochoo Islands. It is distributed in suitable places throughout Honda, Shikoku and Kiushiu, as well as in the smaller Seven Isles of Izu and in Sado Island in the Japan Sea. The absence of pheasants from Yezo is another confirmation of the important barrier formed by the deep straits of Tsugaru, which for many ages have apparently separated the remainder of Japan from all connection with the Asiatic mainland. Monkeys share the southern distribution in common with the pheasants, while grouse occur only on Yezo and northward.

GENERAL ACCOUNT

This bird, the most distinct of all the *Phasianus* group of pheasants, is separated from the others by a water barrier. On the three good-sized islands which form its home it is a bird of the lowlands and seldom reaches any great height on the ranges and mountains of the interior. This preference for low altitudes makes it essentially an inhabitant of the coastal region, although in Honda in some places it extends quite across the island, following the low valleys and gaps in the ridges. Again I have seen it and heard its call within a few hundred yards of the surf breaking on the shore.

Search for any Japanese pheasant must begin and usually ends within sight or close to human dwellings or tilled fields. This, combined with the dense population of Japan, makes the existence of the bird practically dependent upon the will of the natives. It is in much the same case as the pheasants on the preserves of England, except, of course, that the Japanese bird is indigenous. Although the farmers and peasants do considerable trapping and poaching, this is carried on with extreme caution, for the laws concerning the preserving of these birds are very strict. This was the case even as far back as 1852, when Mr. Heine, the naturalist attached to Commodore Perry's expedition, visited Japan.

He writes: "A few days after, Lieutenants Bent and Nicholson and myself made another shooting excursion to the hills, but although we saw many pheasants, only a single specimen was shot, and the birds appeared to be very shy. We observed several Japanese with matchlocks about the hills, firing away at a great rate. As we did not see any of them with game, and as the game-laws of Japan are very severe, so much so, indeed, that their observance has been made a special article of the treaty with the United States, I concluded that the firing was only for the purpose of driving away the pheasants to places where they would be more secure from the strangers."

The best place for studying these birds, as also the copper pheasants, I found to be the training grounds of the troops, which were reservations of good size and apparently Imperial Preserves, usually free from peasants and cultivation, and where the birds were easily approached. This was owing to their having become accustomed to the noise of the presence of human beings through the din and uproar of sham battles and other military tactics. These are also included among the Imperial Preserves. Thanks to permits obtained from the Imperial Hunting Bureau of the Imperial Household Department I observed pheasants in the preserves of Narashinohara in Chiba Prefecture; of Renkojimura in Tokio and of Iwase in Fukushima Prefecture.

Even more than the copper pheasants, however, the Green Japanese Pheasants seem to prefer the vicinity of human cultivated fields, and when the farmers suffer, as they frequently do, from the inroads of pheasants in their vegetable gardens, it is almost always the latter species which is to blame. I heard of several instances where wild birds came regularly to feed with fowls and nested close by.

In such a locality I found myself one spring morning after a warm downpour, when for thirty minutes I watched three hens scratching in a corner of a muddy rice-field. Their feet, legs and under plumage were splashed and coated with the wet clay, but they were unearthing a feast of grubs which was well worth a few bedraggled feathers. While absorbed in these birds, my attention was drawn to a distant pine tree, from the top of which a white-eye was singing—one of the few real bird-songs which I heard at this season in Japan. A moment after I fixed my glasses on the singer it stopped abruptly and flew down, and its place was immediately taken by a cock Green Pheasant. After balancing itself for a moment on the top of this four-foot pine tree, it raised its beak, uttered the strident double challenge of its kind, and with the effort, overbalanced and fluttered to the ground. Later I saw what was probably the same bird calling from a more secure perch on the summit of a low treeless ridge higher up the slope.

In the course of many walks throughout the Green Pheasant country I came twice upon worn patches which were evidently winter sleeping-places of a covey of these birds. Much down and a few contour feathers were scattered about, and the roundness of the "form," together with the central position of the sign, indicated that the birds, like our Bob-white, slept heads outward. How the long tails were managed when they slept thus closely, tails inward, is difficult to imagine. In many places where these birds abounded there were no trees large enough to support them. In one instance I knew of three cocks which slept during the middle months of the winter on a sloping bamboo. They would fly up to the highest arc of the circle, and, as the stem bent lower under the weight of the second and third birds, would edge up the joints until a perfect balance was attained. How they left their swaying perch I never could learn.

At this season—mid-February—the cocks were in the height of their mating, and every good-sized uncultivated hillock seemed to have at least a bird which called and answered throughout the day, especially about ten o'clock in the morning and again at four in the afternoon. Extended inquiry among the Japanese farmers indicated that these birds were extremely sedentary, and very local in their movements, although this is wholly dependent upon latitude. Sometimes in very severe weather the numbers of pheasants in some sheltered lowland are increased, but on the cessation of storms the birds redistribute themselves.

In the northernmost parts of Honda, in the region of Sendai, where there are high plains and mountains, all the Kiji descend to the low levels and the sea-shore during the cold weather. Formerly, when these birds were more abundant, they descended in great numbers, several scores being visible at one time, all headed in a downward direction. This always took place in January. Such a pronounced seasonal shifting in search of food is only slightly marked in central and wholly unknown in southern Japan.

As we go upward and inland the copper pheasants become more abundant, and after a comparatively narrow zone is passed, when both species are found, the green birds disappear. In winter, when severe storms force the copper pheasants down from their higher haunts, this common zone is much widened, the copper birds penetrating far into the haunts of the lowland pheasants.

The Green Pheasants of any one valley appear to hold their own in position and numbers from year to year. The balance is so even that each spring one, two or three cocks will call from much the same positions, and the young birds, if any survive the dangers of elements, weasels and poachers, make their way elsewhere. It is probable that the mortality just equals the increase. This is the condition of things at present. Within the last decade there has been a great depletion of pheasants, the high prices paid by milliners making the poaching risk worth taking, and resulting in the complete extermination of the birds from some rather extensive areas. While they have not as yet repopulated these regions, the pheasants are not now persecuted as much, the customs being very strict about the exportation of feathers and skins.

They seem to keep in pairs or small parties during the winter, pairing off in the spring, the cocks with from one to three hens, and again uniting in small flocks as families in the autumn. As I have said, covies occasionally associate and roost together during the colder months. The cocks are untiring in their challenging in early spring, and so omnipresent was this sound that, after hearing it over much of China, yet when the broken crow comes to my ears from one of our eastern fields or from the runway of a Zoological Garden, it is always some Japanese landscape and scene which the sound memory revives.

This crow, which is both a summons to a mate and a challenge to a rival, in early spring is uttered chiefly at morning and evening. Later, in the full height of the breeding season, there is scarcely an hour in the day when it cannot be heard. Later, as the warmth of summer ends the period of courtship, the calls lessen in number and vigour and again become restricted to the two nodes of dawn and dusk, before dying out altogether. Even in mid-summer, however, an occasional crow may be heard, perhaps a mere expression of exuberant spirits or a family call. Then in the autumn the juvenile attempts ring out, vocal practice in preparation for the ensuing normal challenge.

To the ears of my friend, Prof. Ijima of Tokyo University, the crow of the Green Pheasant sounds like *Chok-kehn !* or *Chok-chok-choken !* while in the distance the crow becomes softened and reduced to *Ken-ken !* To my Caucasian hearing, biased perhaps by weeks of reiteration of the crow of the Ceylon junglefowl, the double note of the Japanese Pheasant is more like the syllables *George Joyce !* or *Geor-ker-joici !* While closely resembling the crow of the common pheasant, the challenge of this Japanese form seems to me to be somewhat higher and shriller, perhaps more metallic. The crow is often followed instantly by a second's whirring of wings, the brief *whoof* of sound being almost synchronous with the final syllable of the crow.

The challenge may be uttered on the ground, or from a boulder or limb of a tree. Once I saw a bird leap into flight and call, rather brokenly, while on the wing. The occasional cackling sound of the more typical *Phasianus* birds of the mainland is seldom uttered by the Green Pheasant and only under the stimulus of sudden fear. Ijima gives me the note of the female as *chiyo-chiyo*. I have heard no utterance from this sex except a low content call.

While the Yamadori or copper pheasants now and then produce the wing-drumming, this is such a common habit with the Kiji or green birds that its imitation is one of the most frequently used methods of enticing the pheasants within sight and gunshot. To a short bamboo rod are fastened two wings of a cock pheasant, partly spread and dried stiff. Then by swiftly revolving this instrument, with the rolling motion like that of drilling a hole, the wings are made to revolve rapidly, either in the air or lightly touching the arms of the operator. The resulting sound is sufficiently realistic to draw any cock within hearing. Prof. Ijima tells me that many pot-hunters simply imitate the call of the hen, to which the cocks respond invariably by wing-drumming, and not by crowing, approaching the position of the supposed hen, and whirring as they come.

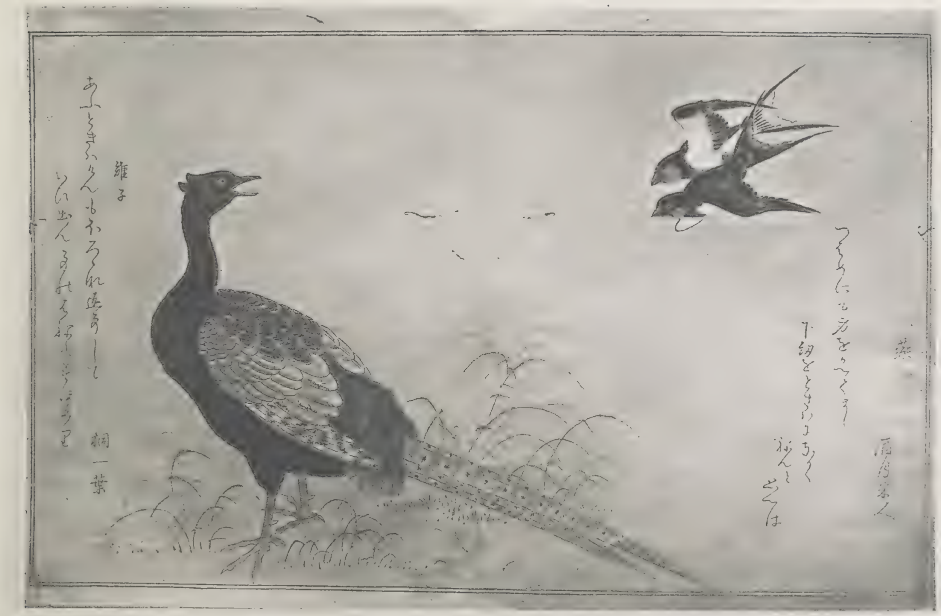
The Kiji takes to wing easily and is capable of covering a considerable distance in a single flight, but even where trees are available it usually chooses to alight on the ground. The copper pheasants, on the contrary, will far more often perch and look about them in an attempt to locate the danger. The most convincing proof of the strength of flight of these pheasants is that given by F. J. Norman. This gentleman tells of having shot dozens of the birds "on the southern slopes of Niijima, a small island lying to the north of Etajima, and with a good mile and a half of sea running between. All the Kiji shot were cock birds, and though I have often searched the island diligently, I never came across a hen pheasant on it. That, and the fact that I always found the cocks in packs of five or six, or more, goes far to prove, I think, they had flown over from Etajima."

HOME OF THE JAPANESE GREEN PHEASANT

The shores of the myriad lakes which surround Mount Fuji are often tracked up by small parties of pheasants which come down to drink. They wander only a short distance up the slopes and hide their eggs beneath some dense-foliaged pine, or close to a fallen tree or boulder. The breeding begins in March and extends through April and May, and only a single brood is reared in a season.

JAPANESE PHEASANT BY HOKASAI

Hokasai, who was born in 1760 and died in 1849, was the greatest of Japanese painters. He lived simply, worked diligently and painted many subjects, bridges, waterfalls, Mount Fuji, portraits and objects of natural history.



HOME OF THE JAPANESE GREEN PHEASANT.

JAPANESE PHEASANT BY HOKASAI.

DAILY ROUND OF LIFE

The food of the Green Pheasants varies with the locality, but under the usual conditions of life will consist of grains of various kinds, such as rice, barley and wheat, and of berries. To a less extent there may be found shoots of herbs and bamboo, bits of sweet potatoe and various vegetables in its crop, while insects, such as grubs, crickets and small beetles, form a still smaller percentage of its food.

The birds begin to mate in March, and the breeding season extends through April and May. The moulting season occurs in the autumn, the plumage of birds shot in September and October often showing extreme abrasion of the feathers. I saw no fights between cock birds, but Japanese hunters told me that the pheasants may have such fierce encounters that one of the combatants succumbs. The courtship, as I have observed it in captive birds, differs in no way from that of the common pheasant.

The birds are essentially polygamous, although the exigencies of love and war may often result in allotting but a single female to a cock. The nests are placed on the ground and without special lining, except for dried leaves and other debris which may have been in the depression when first occupied by the hen. I found nests with full sets of eggs varying from six to twelve, and fifteen are said to be sometimes laid by a single hen. Prof. Ijima tells me that in the latter number, those deposited last are often smaller in size and infertile. There is considerable variation in the eggs of the Green Pheasant, the range of pigment extending from pale stone-colour to quite a dark brown. The size shows less extremes, the measurements being from 1·5 to 1·8 mm. in length and from 1·2 to 1·4 in breadth, the general average being 1·6 by 1·3 mm.

A single brood is reared in a season, and the reports I received of second and even third broods are based on later layings, incident on the destruction of the first nest or set of eggs. When this is destroyed by flood or other cause, the hen will at once make another nest. In this case the number of eggs will be fewer, from four to eight. Seldom are ten chicks seen with a single hen. Four or five seem to be the more common number which survive the dangers of early chickhood. And these dangers are far from few. The hawks, kites, crows, magpies, weasels and snakes all take their share, but their greatest enemy is, undoubtedly, the half-wild domestic cats which abound in some places. Although the skins, both dried and of freshly killed birds, are comparatively free from Mallophaga, yet the living pheasants seem to suffer from their attacks, or else they take an unusual pleasure in the delights of dust-baths. Wherever Kiji are found, one will frequently run across the characteristic basin-like depressions which mark the dust-baths of these birds. Some especially delectable place will apparently be used by many individuals in succession, the basin becoming deep and wide, and so filled with light dust that when a bird lies down and flicks the powder into its plumage, the dust rises in clouds. Once I thought I must be approaching a small hot spring giving forth masses of steam, and only when I reached the place did I realize that a few seconds before, pheasants had been using the dust of the place. During my approach they had crept quietly away, and no searching of the surrounding brush revealed a single bird. There were only a few tell-tale feathers, numerous tracks, and the earth still warm and the dust still blowing upward, to tell of their recent occupance. In Yamadori country such dusting-places are never found.

Although polygamous by nature, the cock pheasant in autumn is often seen with his single or several hens and the broods of young birds, but I do not know of the cocks taking any part in actually feeding or sheltering the young.

I have already mentioned the stringent game-laws of former times. At present, with the increasing individualization and lawlessness of the people, enforcement of these laws is becoming more and more difficult. At present pheasants can legally be killed only from the 1st of November to the last day of February. In out-of-the-way districts they are shot every month in the year, and the female is often killed while sitting on her eggs. The greatest defect in the game-law of Japan lies in the fact that no private person is permitted to have game-preserves. The Emperor alone has this privilege, the result being that as soon as the season opens licensed gunners overrun the country, shooting where they please.

Japan is a land of frequent earthquakes, and it seems to be a thoroughly authenticated fact that some time in advance of a shock all the pheasants of a district will call loudly, and in a manner so unlike the usual rather isolated crowing, that the natives can always recognize it as a warning. The preliminary earth tremors, much too delicate for perception by our human senses, are detected and reacted to by the pheasants, just as the coarser stimuli of thunder or the noise of guns will excite pheasants of other kinds to continued vocal utterance.

As the first account of its kind, the description given by Mr. Heine of Perry's expedition is of considerable interest. He says: "After the treaty of Yokohama had been concluded the United States squadron proceeded to Simoda. A friendly intercourse with the natives was established, and I constantly availed myself of Commodore Perry's kind permission to make additions to our collections in natural history. One morning, at dawn of day, I shouldered my gun and landed in search of specimens of birds, and that day had the good fortune to see, for the first time, the versicolor pheasant. The province Idza, at the southern extremity of which the port of Simoda is situated, forms a long neck of land extending from the island of Niphon, in a southerly direction, and is throughout mountainous, some of the mountains being from four thousand to five thousand feet high. The valleys are highly cultivated, presenting in the spring a most luxurious landscape. The tops of the mountains and hills are in some places composed of barren rocks, and in others covered with grass and shrubs, producing an abundance of small berries. Between those higher regions and the fields below, the slopes are covered with woods, having, for the greater part, such thick undergrowth that it is scarcely possible to penetrate them. Following the beautiful valley, at the outlet of which the town of Simoda stands, for about four miles, I came to a place where the Simoda creek divides into two branches. Selecting the eastern branch, I soon left fields and houses behind me, and, ascending through a little gulley, I emerged from the woods into the barren region. It was yet early in the morning; clouds enveloped the peaks and tops of the hills; the fields and woods were silent, and the distant sound of the surf from the seashore far below, rather increased than lessened the impression of deep solitude made upon me by the strange scenery around.

"The walk and ascent had fatigued me somewhat; I had laid down my gun and game-bag, and was just stopping to drink from a little spring that trickled from a rock, when, not ten yards from me, a large pheasant arose with loud rustling noise, and before I had recovered my gun, he had disappeared over the brow of a hill. I felt somewhat ashamed for allowing myself thus to be taken so completely aback; but, noticing the direction in which he had gone, I proceeded more carefully in pursuit. A small stretch of tableland, which I soon reached, was covered with short grass and some little clusters of shrubs, with scattered fragments of rocks; and as I heard a note which I took to be the crowing of a cock pheasant at a short distance, I availed myself of the excellent cover, and, crawling cautiously on my hands and knees, I succeeded in approaching him within about fifteen yards. Having the advantage of the wind and a foggy atmosphere, and being, moreover, concealed by the rocks and shrubs, I could indulge in quietly observing him and his family. On a small sandy patch was an adult cock and three hens busy in taking their breakfast, which consisted of the berries already mentioned growing hereabouts in abundance. From time to time the lord of this little family stopped in his repast and crowed his shrill war-cry, which was answered by a rival on another hill at some distance. At other moments again, when the sun broke forth for a short time, all stretched themselves in the golden rays, and rolling in the sand, shook the morning dew from their fine plumage. It was a beautiful sight, and I looked upon it with exceeding pleasure; so much, indeed, that I could not find the heart to destroy this little scene of domestic happiness by a leaden shower from my fowling-piece. Suddenly the birds showed signs of uneasiness, and I soon discovered the cause in a Japanese root-digger, coming from the opposite direction. I therefore took up my gun, and, standing on my feet, raised the birds also, and as they flew towards the next hill I had the good fortune to bring down the cock with one barrel of my gun and one of the hens with the other.

"The Japanese, who came up after I had loaded my gun and secured my game, looked with some astonishment at the stranger, for I was certainly the first foreigner who had been in pursuit of game on the hunting-grounds of Niphon. He evidently asked me several questions, which I was not, of course, able to understand, but from his signs, and the frequent repetition of the word 'statzoo' (two), I inferred that he inquired whether I had fired twice in such quick succession with one gun. I nodded and explained to him as well as I could the nature of my double-barrelled gun, and the use of percussion caps, which seemed to astonish and delight him very much. A pipe of tobacco which I offered was gladly accepted; and in answer to a question that he appeared to understand, he gave me the name of the pheasant as Ki-zhi. Later in the day more people came to the hills, some for the purpose of digging roots, others to look after their cattle, which appeared to be turned out to graze on the hills. The birds had taken to the bushes, where I could not follow them, and so obtained no more specimens on that occasion."

The last view I had of Kiji in their native home was on a perfect day in Kagoshima. I was returning from a long day's tramp after Ijima's copper pheasants, and for a few minutes a splendid cock Green Pheasant stood outlined at the summit of a gentle rise. The setting was the deep blue waters of the bay; the pale blue of the sky; the clear green of the graceful, aged pines, while over all towered the majestic purpled cone of Sakuragima. To my left, in a grove of open cryptomerias, several old Samurai were teaching a group of young men to shoot with bows and arrows, and it was a stray shaft which hurtled past the pheasant, which at last made it dive into the underbrush and vanish from my sight.

CAPTIVITY

The first living Green Pheasants are said to have been brought from Japan to Antwerp in 1840. The Earl of Derby purchased a pair of these, the female of which soon died. The male was crossed with several hens of the common pheasant, and the successive generations were bred back until almost all trace of the latter was lost, and the birds appeared to be full-blooded Japanese. These were distributed, some being liberated in Italy and others in Norwich. Since that time many individuals of this species have been imported. The full-blooded birds do not seem to be a pronounced success in England. They do not breed so prolifically and are not so hardy as the common pheasant, this being especially true of birds in Scotland and the north of England. Hybridizing, however, seems to increase the size and hardiness of the birds, and one of these first generations is said to have weighed 5 lb. 4 oz. They were introduced into Oako, Hawaii, and seem to be thriving.

Japanese pheasants breed fairly freely and are not difficult to rear. They cross readily with any *Phasianus*, and the offspring are fertile *inter se*. The Japanese told me repeatedly that the wild birds occasionally crossed with Yamadori, the Copper Pheasant, and still more rarely with domestic fowls, but I could obtain no definite proof of this. Hybrids have also been obtained with lineated pheasants. They are not very long-lived birds, however, and of twenty-seven individuals in the London Zoo of which records have been kept, the average length of life was twenty months, one bird living over seven years.

DETAILED DESCRIPTION

ADULT MALE.—This is the most aberrant of all the true *Phasianus* and, aside from its being an insular form, shows no direct gradation with the continental species. With reason, it is often considered the most beautiful of its genus, while as to size it is the smallest.

Forehead, chin and throat, grass green; centre of crown and nape, bronze green; this is succeeded on each side by an evanescent, whitish zone, then by decided grass green and purplish blue, the latter forming the border of the bare facial area; this purplish-blue colour characterizes an elongated, sub-ocular patch, the entire under and side neck and a narrow band across the upper neck; mantle and upper back, dark green, tinged with purple in all but fully adult birds; lower mantle with two isolated buff lines near the tip; the hidden parts of the feather show several broken concentric buffy lines, the outermost marking the limits of the metallic-green visible portion of the vane from all the rest, which is dead black; on the lower back the green fringe grows longer and less cohesive; the rump and upper tail-coverts show the usual *Phasianus* disconnected condition of this greatly elongated fringe, which from intense metallic green has changed to greenish slate; unlike all the other members of the genus there are no lateral, rust-coloured patches, the sides of the rump inclining to clear bluish slate or glaucous grey.

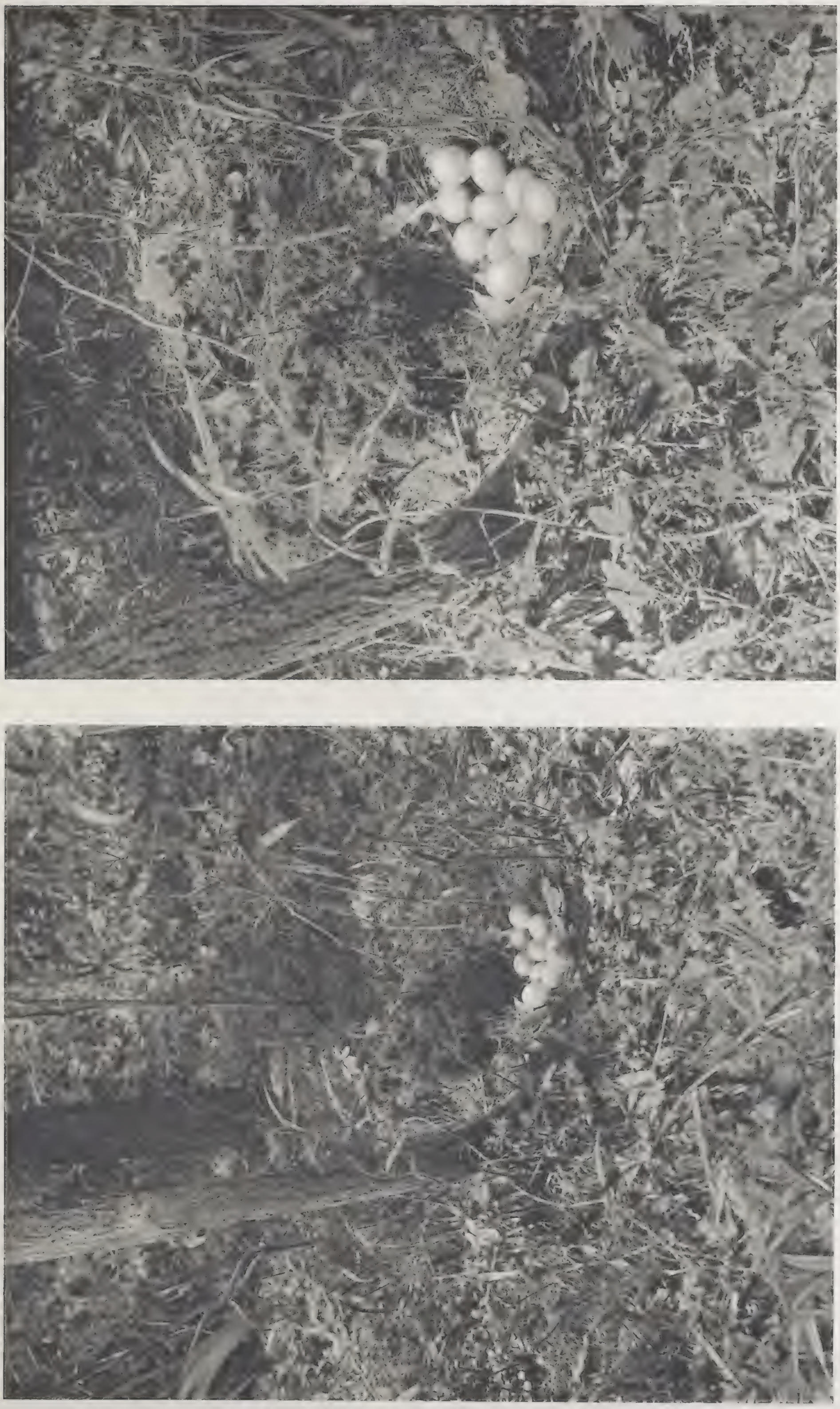
Wing-coverts, bluish slate; the scapulars form a distinct patch of colour; the pattern is similar to that of the mantle, but the visible green is replaced by a bright chestnut, slightly margined with green; while part of the inner concentric lining is visible; on the tertiaries this chestnut coloration becomes split at the tip and reduced by encroaching greenish buff, and the concentric lines become mere mottlings; the buff

NEST AND EGGS OF THE JAPANESE GREEN PHEASANT

THE nest is placed on the ground, without a special lining except for dead leaves and other debris which may have been in the depression when first occupied by the hen. The eggs are the smallest of all this group of pheasants, and vary in colour from pale stone-colour to dark brown.

The hawks, kites, crows, magpies, weasels and snakes are enemies both of eggs and newly hatched young birds.

PHOTOGRAVURE PLATE 53



NEST AND EGGS OF THE JAPANESE GREEN PHEASANT

is dominant on the inner secondaries, changing to greyish brown, while the buff mottlings become several oblique, broken, whitish bars and a narrow outer margin of the same colour; the primaries show no radical change from this pattern, the inner web being brown, the outer greyer, both deeply toothed or barred with triangular whitish patches; many of the inner greater coverts show a broad, lateral, deep chestnut margin. The under-plumage is a deep, metallic green, the thighs and under tail-coverts, dead black.

Tail greenish grey, the more central pairs widely fringed with purplish; the feathers have a series of black, elongate marks down the centre, each touching the shaft; these may be opposite one another, forming a score or more of transverse bands, or they may alternate, one after the other; they increase in size toward the tip; as we proceed toward the outer tail-feathers these black marks decrease, the outer pairs being regularly freckled with greenish grey and black; the underside of the feathers is very unlike the upper, being solid black, with the wide, disintegrated fringe chestnut.

The ear-coverts are long and dead black; the face, except for the sub-ocular patch and the lower half of the lores, is covered with scarlet flesh, raised into papillae and dotted with short, velvety black featherlets; spurs, short and stout.

Mandibles, yellowish or dusky horn colour; legs and feet black or dusky; irides, hazel. Weight 3 to 4 lb. Length, 770 mm.; culmen, 33; wing, 228; tail, 365; tarsus, 70 mm.

VARIATIONS

In Japan there are occasionally brought into the markets, with other wild shot birds, individuals of a decided greyish tone. These differ radically and regularly from normal birds and seem to represent a feral mutation. I shot one myself, not, however, recognizing it as unlike the other two birds which were with it. When I saw I had obtained one of the unusual types I went after the remaining two, of which I secured one, and found it normal in every respect. The chief distinction is the almost complete loss of metallic colouring, a condition which might be approximated by extreme wear and tear of the plumage. But the bird I secured was newly moulted, and wholly lacks the metallic colouring on head, mantle and underparts. The feathers are a greyish black, the purple area being marked with a tinge of vinaceous, while the underparts have a faint, dull greenish cast in some lights. The scapulars are the most brilliant touch of colour, the chestnut being but slightly dimmed. A number of native Japanese, whom I questioned, knew of this form and had a special name for it.

ADULT FEMALE.—The hen Japanese Green Pheasant is much more like its congeners of the Asiatic mainland than is the cock. In comparison with the hen of *colchicus*, the general coloration of *versicolor* is much darker and the pattern more pronounced.

The head is pale sandy buff, with the crown feathers tinged with rufous; a black shaft-stripe gives a streaked appearance; a broad margin on the neck and upper mantle feathers is pinkish grey, tipped at least on the neck with bluish; a basal shaft-stripe is chestnut, while a broad, black, concentric band extends quite around the webs, running parallel with the margin; the distal visible portion of this area is strongly tinged with metallic green; the pinkish gives place to sandy buff on the back and wing-coverts, which are characterized by wide margins of this colour; the black is also supplanted by chestnut, the pattern of these areas in the undisturbed plumage being thus chestnut, with a wide pale buff border and a broad wedge of black extending half-way up the shaft; on the rump and upper tail-coverts the black wedge reaches the tip, isolating two lateral patches which have changed from chestnut to a brownish buff.

On the flight-feathers, the buffy margin has so increased that it may be considered the ground-colour, the remaining pattern being a broad, bold barring of black, with more or less tinging of chestnut in the interspaces; tail, dark red or often pinkish, brown mottled with dark and with black bars similar to those of the male, which, however, are narrowly bordered posteriorly with pale buff; the outer pairs show a succession of cross-bars of black, pale buff, black and reddish brown, one after the other.

The facial area is rather thinly feathered, and especially below the eye with pure white; chin and throat, clear sandy buff; under neck, pinkish grey and the remainder of the plumage sandy buff, all the feathers strongly barred with black; on the under tail-coverts this buff becomes chestnut and the feathers are tipped with white.

Mandibles dusky horn colour; legs and feet dusky; irides hazel. Length, 650 mm.; culmen, 29; wing, 204; tail, 255; tarsus, 65 mm.

SYNONYMY

Phasianus versicolor Vieill., Gal. Ois., II. 1825, p. 23, pl. 205; Gray, in Griff. ed. Cuvier, III. 1829, p. 23, pl.; Temm., Pl. Col., V. 1830, pls. 6, 7 (Nos. 486, 493); Less., Traite d'Orn., 1831, p. 496; Schinz, Nat. Abbild. Vög., 1833, p. 251, pl. 96; Jard., Nat. Lib. Orn., IV. 1834, p. 200, pls. XIV and XV; Gray, Gen. Birds, III. 1845, p. 497; Schinz, Nat. Vög., 1853, p. 150, pl. 72; Cassin, Perry's Exped. Japan, II. 1856, p. 223, pl. I (Simoda); Gould, Birds Asia, VII. 1857, pl. 40; Sclat. and Wolf, Zool. Sketches, I. 1861, pl. 38; Sclater, List Phas., 1863, p. 4; Sclater, Proc. Zool. Soc. London, 1863, p. 116; Gray, List Gall. Brit. Mus., 1867, p. 28; Gray, Hand-list Birds, II. 1870, p. 258; Elliot, Mon. Phas., 1872, II. pl. IX (text); Swinhoe, Ibis, 1875, p. 452 (Hakodadi); Blakist and Pryer, Ibis, 1878, p. 226 (Hondo); Seebohm, Ibis, 1888, p. 313; Seebohm, Birds Japan, 1890, p. 370 (Japanese Islands except Yezo); Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 334; Grant, Hand-book Game-birds, II. 1897, p. 32; Nehrkorn, Katolog der Eiersammlung, 1899, p. 194; Sharpe, Hand-list Birds I. 1899, p. 38; Oates, Cat. Birds' Eggs Brit. Mus., I. 1901, p. 58; Dresser, Manual Palae. Birds, II. 1903, p. 664; Buturlin, Ibis, 1904, p. 412; Günther, Proc. Zool. Soc. London, 1904, II. p. 130; Tegetmeier, Pheasants, 1904, p. 165; Parlett, The Field, CVII. 1906, p. 629 (White variety); Ingram, Ibis, 1908, p. 168; Buturlin, Ibis, 1908, p. 593; Mitchell, Proc. Zool. Soc. London, 1911, p. 521 (Viability); Finn, Game-birds India and Asia, 1911, p. 59.

Phasianus diardi, Temm., Pl. Col. V. 1830 (text to *Ph. versicolor*).

Phasianus colchicus versicolor, Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; Millais, Nat. Hist. Brit. Game-birds, 1909, p. 106.

SYRMATICUS
LONG-TAILED PHEASANTS

SYRMATICUS

LONG-TAILED PHEASANTS

Family PHASIANIDAE

Subfamily PHASIANINAE

Genus *SYRMATICUS*

THIS genus has heretofore contained but a single species, *reevesi*. After careful comparative study I have expanded it to include four additional species, as follows:—

Reeves's Pheasant	*Syrmaticus reevesi* (Gray).
Soemmerring's Copper Pheasant	*Syrmaticus soemmerringi soemmerringi* (Temminck).
Scintillating Copper Pheasant	*Syrmaticus soemmerringi scintillans* (Gould).
Ijima's Copper Pheasant	*Syrmaticus soemmerringi ijimae* (Dresser).
Hume's Pheasant	*Syrmaticus humiae humiae* (Hume).
Burmese Pheasant	*Syrmaticus humiae burmanicus* (Oates).
Elliot's Pheasant	*Syrmaticus ellioti* (Swinhoe).
Mikado Pheasant	*Syrmaticus mikado* (Grant).

A superficial glance at the males of such pheasants as Reeves's, Elliot's, Mikado and Copper shows a diversity of colour which seems to have nothing in common. But in the greatly elongated and narrowed central rectrices and a number of other characters we find that they agree, and differ from the other nearly related genera, especially *Phasianus*. In the females also we find real criteria of relationship.

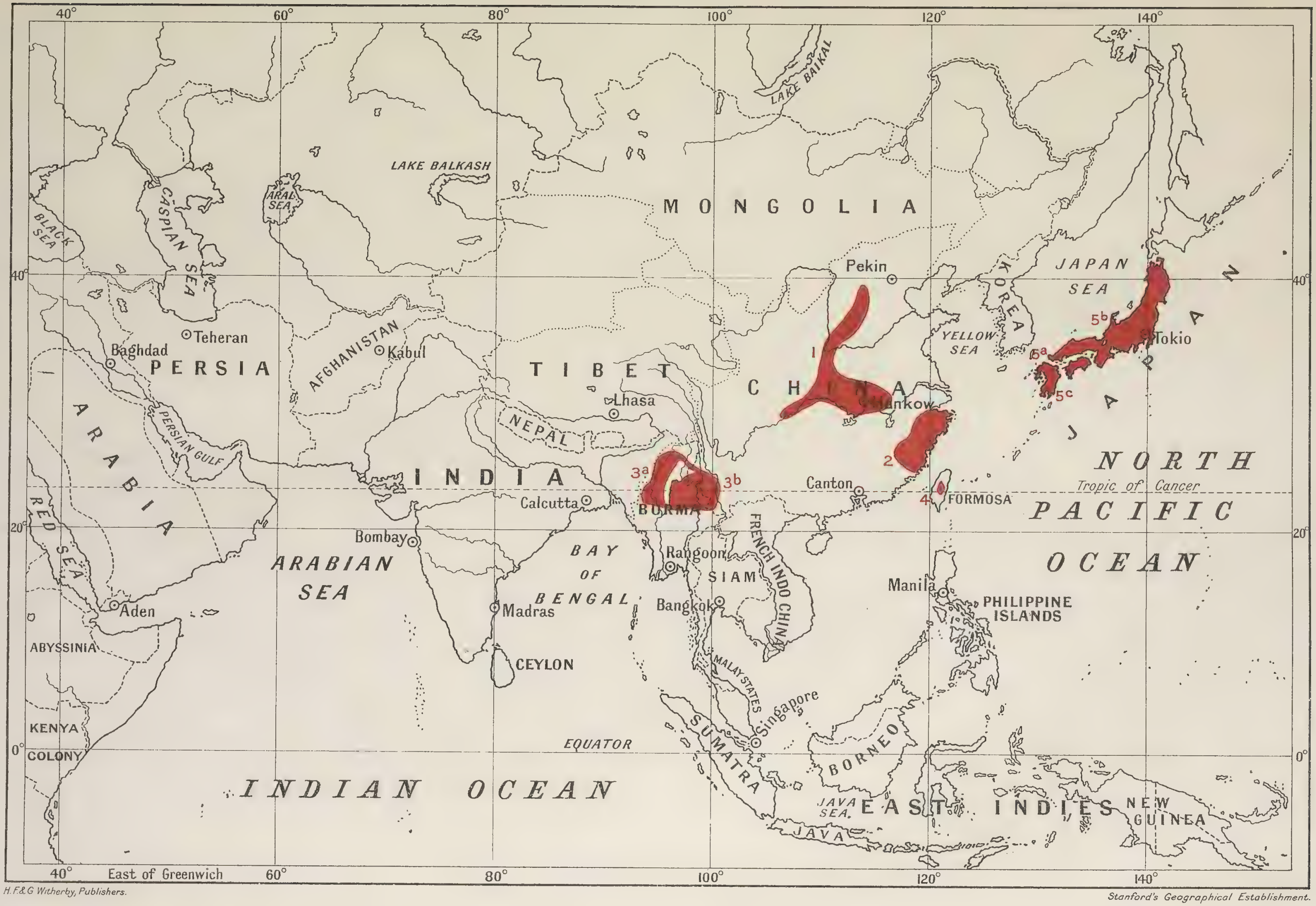
Taking females of these five species and placing them side by side we are at once struck with the great similarity of their rather specialized colours and patterns. Comparison with the corresponding sex of related genera emphasizes this similarity. The following tabulated characters illustrate this:—

Syrmaticus females

(*a*) Lateral rectrices always dominately rufous; with subterminal black and terminal black bands.
(*b*) Breast solidly or heavily marked; belly wholly or dominately white.
(*c*) Mantle with conspicuous white, arrow shaft-marks, or (*soemmerringi*) a pale shaft-line or terminal streak.
(*d*) Central one or two pairs of rectrices with very indistinct cross-bars (except *mikado*), strikingly unlike the 3rd and other late lateral pairs.

Comparing these characters with those of *Phasianus*, for example, we find the lateral rectrices with little or no rufous and barred throughout; the central rectrices not differing from the lateral ones and with distinct cross-bars; the breast never decidedly distinct in pigmentation from the rest of the ventral surface; the mantle never with white or pale shaft-streaks.

The disintegrated, hair-like condition of the rump feathers in the males of true *Phasianus* becomes an important character when the *soemmerringi* group is removed. This is wholly absent from the copper pheasants and from *Syrmaticus* as I define it. As to intra-generic differences: (1) *reevesi* and *soemmerringi* have eighteen rectrices, while *humiae*, *ellioti* and *mikado* possess sixteen. In this instance the remarkable resemblance between the females certainly is a more fundamental and important character than the difference of a pair of tail feathers, when, to quote but a single illustration, we recall that in the genus *Gallus*, *varius* possesses one pair of rectrices more than *gallus*. (2) The extreme difference in colour of the males would seem to militate against uniting them in a single genus, until we consider the parallel case of *Chrysolophus*, where the Golden and Anherst males present quite as diverse colours and patterns. The genus *Syrmaticus*, as I define it, seems a logical assemblage of forms, fulfilling our generic law of geographic distribution, capable certainly of subgeneric division, but on the whole differing in no more important characters than occur in other phasianine genera.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60°
80°
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East of Greenwich
MONGOLIA
LAKE BAIKAL
LAKE BALKASH
ARAL SEA
CASPIAN SEA
BLACK SEA
Teheran
Baghdad
PERSIA
AFGHANISTAN
Kabul
TIBET
Lhasa
NEPAL
INDIA
Calcutta
Bombay
Madras
CEYLON
ARABIA
PERSIAN GULF
RED SEA
Aden
ABYSSINIA
KENYA COLONY
ARABIAN SEA
BAY OF BENGAL
INDIAN OCEAN
EQUATOR
BURMA
Rangoon
SIAM
Bangkok
FRENCH INDO CHINA
MALAY STATES
Singapore
SUMATRA
JAVA
JAVA SEA.
BORNEO
EAST INDIES
NEW GUINEA
PHILIPPINE ISLANDS
Manila
CHINA
Pekin
Hankow
Canton
FORMOSA
YELLOW SEA
KOREA
JAPAN SEA
JAPAN
Tokio
NORTH PACIFIC OCEAN
Tropic of Cancer
1
2
3a
3b
4
5a
5b
5c

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Stanford's Geographical Establishment.

MAP SHOWING THE DISTRIBUTION OF THE LONG-TAILED PHEASANTS.

Region 1. Syrmaticus reevesi
,, 2. ,, ellioti
,, 3a. ,, humiae humiae
,, 3b. ,, ,, burmanicus

Region 4. Syrmaticus mikado
,, 5a. ,, soemmerringi soemmerringi
,, 5b. ,, ,, scintillans
,, 5c. ,, ,, ijimae

REEVES'S PHEASANT

Syrmaticus reevesi (Gray)

NAMES.—Generic: *Syrmaticus*, Latin, *syrmaticus*, dragging or trailing, from the Latin *syrma*, a robe with a train. Given in reference to the long, trailing tail-feathers. Specific: *reevesi*, after a Mr. Reeves, who brought the first living bird to Europe. English: Reeves's or Bar-tailed Pheasant. French: Le Faisan Superbe. Faisan bronze. German: Königsfasan. Native: Chi-ky; Djeu-ky (Arrow-fowl, Chinese).

BRIEF DESCRIPTION.—Male: Crown white, surrounded with a black band extending from forehead to occiput; chin, throat and nape white, margined below by a black collar; upper parts cinnamon, wing-coverts white, bordered with black; lower plumage somewhat similar, chiefly white margined with chestnut, and on the flanks with buff; remainder of under parts black; central pair of tail-feathers greatly elongated averaging five feet in length, white down the centre, buff on the sides, barred with black and chestnut; outer pairs tipped with black. Female: Crown reddish brown; rest of head buff, with ear-coverts and a nuchal band blackish; upper mantle rufous, tipped with grey, mottled with black, and with wide white spot; rest of upper parts mottled with grey, buff and rufous, wing-coverts with buff and the lower back with black shaft-stripes; anterior under parts somewhat like mantle, but with smaller white spots; rest of under plumage pale buff; central tail-feathers mottled with sandy, buff and black and about sixteen inches long; outer ones chestnut, mixed with black, and barred and tipped with white.

RANGE.—Central and northern China.

THE BIRD IN ITS HAUNTS

CERTAIN mid-reaches of the Yangtse River bring vividly to mind descriptions of the rounds of Purgatory: the black, frowning cliffs, rising sheer hundreds of feet above either bank, the gnarled, stunted vegetation, deformed by the elements and scanty nourishment, and between, the dark rushing river, swirling through gorges, foaming over rocks, or in even more sinister manner, eddying over submerged obstructions!

The elements, too, do their part: the sweltering, humid summer sun, making of the days one long blistering cauldron, and in winter, the freezing, dark mists searching one's very marrow. For a brief time, in spring and autumn, one may view the country through rosier glasses, temperate winds, moderate warmth, but even then the land is forbidding, the stream treacherous.

It was on one of the purgatorial days that I set forth in search of Reeves's Pheasant. Leaving my mat-roofed sampan on the gravel where a small side stream made its way down through a narrow valley, I slung my glasses in place and started to climb. I had not ascended fifty feet when a group of Chinamen came into view around a bend in the river, well worthy of their surroundings. Closely packed together, they screamed and yelled like wild beasts, bending almost double, exerting every ounce of strength in their bodies. A moment later and I saw that their form of expiation was to drag ever onward a big, awkwardly-built boat against the surging torrent. At times it seemed as if the water would win, each man and woman flattened, almost prostrate, clinging to boulders, working their toes into crevices, their faces distorted into cruel bestial lines, and ever the harsh cries and screams rang out, without rhyme or rhythm.

One of the women, hardly distinguishable in her rags and dirt from the men, had a long, slender object in her hair, and a glance through the glasses showed this to be a feather from a Reeves Pheasant—a sense of beauty even in these lowest of toilers. Even as I looked it fell out and was trampled underfoot.

A few minutes more took me out of sight and sound of the writhing, squirming mass, and the peace of the wilderness closed down upon me. For a mile or more I struggled on, through dense growths of coarse grass or stunted bamboo, which scraped and clung to my leggings, making every step an effort. Then the undergrowth thinned and a scattering of pines and cypress-like growth appeared, with occasional oaks.

When crossing a ridge, the sky cleared for a moment and the gorges of Ichang appeared clear in the sunlight, deep, steel blue near at hand, purpling and fading into the distance. Then the cold clammy mist shut down again and for the rest of the day downright rain alternated only with drizzle. On the previous days I had heard the call of this splendid pheasant, but had not caught even a glimpse of one. I had learned something of their habits from a native hunter, and to-day I intended to pit this knowledge against their keen sight and hearing. Reaching at last the main dividing ridge, I sent my China boy straight down toward the bottom, while I made my way along and just below the ridge-top for a mile or more. At this point oaks predominated and in their shelter I crept downward until I stood upon a little outjutting mass of rock, with a shallow fault on the top, into which I crept. Here I occasionally had an excellent view of the whole valley.

Within reach of my hand were mosses, reeking with moisture. To the left down the slope a tangle of grass was surmounted by a mass of pale rose-coloured azalea blooms, the only touch of warm tone in the entire landscape. Beyond this, my view was intermittent. Now it was so obscured with driving rain and fog that the world was only a few steps of rock and moss leading into a chaos of pale blue mist. Then a lift of warmer air would come rushing up the valley and the tossing needles of the trees would come into view, and even the rugged dull green of the opposite slope.

I knew I was far from any Chinese village, but even in this isolated, wild spot I saw evidence of the omnipresent Mongolian. In the centre of the opposite side of the valley was a large grave of weathered stone, the gracefully semicircular wall nestling into the steep slope, and though obviously of man's handiwork, yet not out of harmony with the wildness. What tremendous labour it must have been to get the great stones up to that spot and with their rude tools to hollow out the grave and the thirty-foot niche.

A low call came from far below me, and soon a babbler flew up and uttered its loud guffaw. I knew that it had discovered something, and I sent forth the low, penetrating trill, which I knew would make my boy freeze into immobility for as many minutes or hours as I chose.

Then came my first view of a live Reeves in its wild home—a hen, which walked slowly into view, with head erect, showing the contagion of suspicion aroused by the babbler. She leaped upon a boulder and stood quietly for many minutes, then crept down the side of the rock and began to feed up the slope toward me. I gave the signal for the boy to return to the sampan, but quietly as he must have progressed, he was nearer the birds than I had thought possible, and with a low croak the babbler flew a

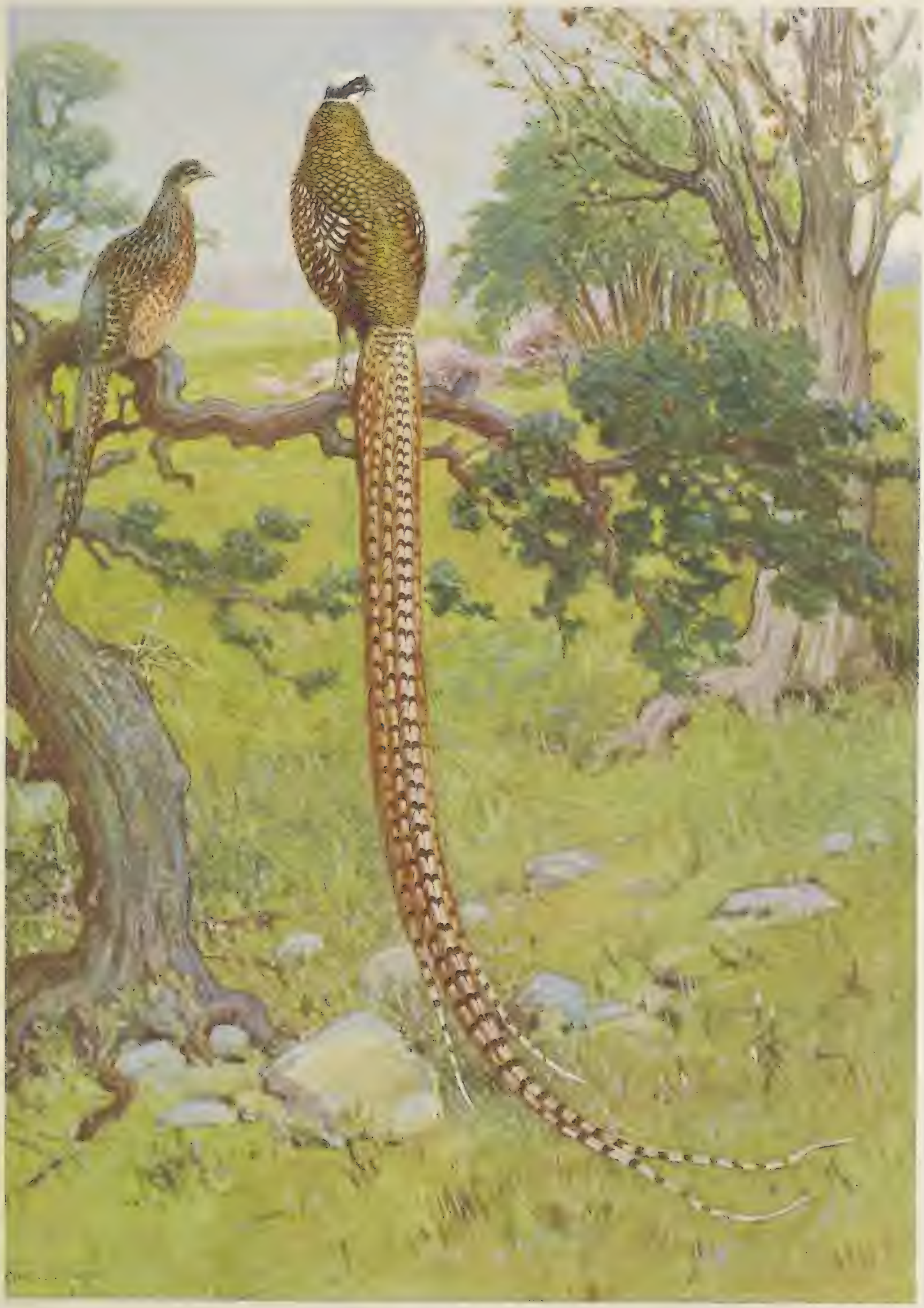
REEVES'S PHEASANT

Syrmaticus reevesi (Gray)

Many years before it was seen alive this gorgeous, long-tailed pheasant was known from Chinese paintings, and was thought to be as unreal as the phœnix or dragon. Marco Polo was the first to describe the bird in life.

It lives in the very heart of China among the gnarled oaks and pines, and nests among the grass and azalea bushes. In spite of the long tail, sometimes six feet long, the Reeves is one of the swiftest and strongest flyers among the pheasant.

PLATE LXI.



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REEVES'S PHEASANT.

short distance up the hill, and four more Reeves showed themselves, running with heads low. Their fear was only a passing emotion, however, and within ten minutes they were off guard and feeding busily. Step by step they came on, the whole quintet being now in full view, now half hidden. The long, trailing tails of the males swept along behind, sometimes bent almost into a circle as a bird turned abruptly to seize some insect or berry. The constantly varying elements added to the uncertainty of the birds' movements, and when for several minutes at a time they were completely obscured by mist, I fairly trembled with the excitement of again picking them up through the glasses.

Again and again they would stand straight up on tip-toe and violently vibrate their wings, following this with a quick shake of the entire plumage, flicking off the gathered moisture in a multitude of drops. Except when actually obscured by the driving fog the birds seemed as bright as if their plumage was dry. There was no protection in their colouring, at least among these surroundings, and I had no difficulty in detecting an exposed wing or part of a tail even when the bird was perfectly quiet. The two hens seemed bolder than their long-tailed mates, and almost always were in the van, leading by a few feet on their upward jaunt. At one place where a series of steep terraces had to be surmounted, the birds went in single file, a hen leading and all the others zigzagging upward exactly in her footsteps. It was remarkable how adept the pheasants were at scaling these miniature cliffs. At times a bird had to crouch with its breast pressed closely against the rocky wall, its tail dangling straight down, while it edged sideways along a narrow ledge to where the slope became less steep. Not once did they fly, although often a few flaps would have saved them many minutes of hard effort.

Before they reached me, a flock of long-tailed blue magpies flew past, their harsh cries being audible long before they emerged from the mist. When the small flock of Reeves came within forty feet I had flattened down until nothing was visible but the flat, weathered top of my cap and my binoculars. Not a suspicion came to the birds until one of the rascally babblers, which I had entirely forgotten, passed me on one side, and from a neighbouring tree let forth a flood of personal abuse upon me. I was interested to see every Reeves crouch at once, as though they did find some instinctive protection in their parti-coloured plumage. Against the grey rocks and green grass, however, they were markedly conspicuous.

Knowing that all observation was at an end, I stood up, and five living rockets shot up and outward, tails quivering and undulating, wings a mere blur, bodies sending forth shimmering flashes of gold as the birds settled into their long flight, headed upward toward the still higher opposite ridge. Almost at once they vanished into the mist, and only a trembling pine branch which one of the birds had touched showed that any living pheasant had ever been within sight. At the shock, the flowering conifer shed a shower of pollen dust, which was at once drowned in the drizzling rain. The babblers mewed peevishly in the underbrush, and after wringing as much water as possible out of my clothing, I started on my long, but mostly downhill return to the distant gorge of the Yangtse. My boy greeted me with: "Have seen, have seen twenty, forty pheasant." But on cross-questioning these became reduced to three of the birds of the flock which had given me such a splendid opportunity.

GENERAL DISTRIBUTION

The exact outlines of the range of this pheasant will not become known until a thorough reconnaissance of the fauna of Central China is made. We know, however, that in the southern part of its range it does not live on the lowlands and plains, so that by keeping to the foothills of the mountains, from two to five thousand feet, we may trace the distribution of the bird as follows: along the valley of the Yangtse from eastern Szechuan, through and including most of Hupeh, and possibly extending as far to the east as Anhwei. From north-eastern Hupeh a long, rather narrow finger leads along the contiguous borders of Shensi and Honan, Shansi and Chili, to the latitude of Pekin, where it is found only occasionally. The centre of its range is most certainly Hupeh.

GENERAL ACCOUNT

Before detailing our rather meagre knowledge of Reeves's Pheasant I will repeat the account of a hunting trip (Creagh, "The Field," May 1866), which will supplement the observations I have already presented:—

"It was from Ichang, a post at the head-waters of the Yangtse, the great river of China, or rather where that river leaves its gorges, that I started with the stream to a large valley where I knew Reeves's Pheasants had been seen. It is useless to ask any questions of the countryfolk, who will always say 'yes.' I therefore landed and walked along a wide valley, with high perpendicular mountains of conglomerate on either side, and beetling over small woods of cypress. The birds live on the berry of this tree, and fly from one wood to another. They will never show themselves if they can avoid it, and, through their great fleetness when running, steal away before the dogs. Sometimes, however, when taken by surprise, they rise, and then only by great caution can a single sportsman hope to get them. Surrounding the small woods with several guns is the best way to bag them. I think they drive away the common pheasant, for I have never seen them together. This may, perhaps, be due to the fact of their living on different food. I had with me at the time a spaniel and a red Irish setter, and, as the day was fine and clear, walked on quietly until I came to what appeared a good country. The hills here were lower, and the wood fairly dense, but free of undergrowth. A woodcutter told me he had seen several pheasants a few days ago, but could give me no further information, so, tying up my spaniel, I determined to work quietly along with the setter. Although it was January the day was hot, and I was obliged to divest myself of my coat as I struggled up the hill. I worked along the lower part without coming on any scent. Suddenly the setter got very busy, and moved along, showing me that he had some large game. I followed on as well as I could over the broken ground. False scent, back again; then the dog took a turn up the almost perpendicular rock. Good gracious! thought I, how can birds get up there and leave any scent? They had evidently helped themselves with their wings. I was determined to follow, and brought the setter back to a place where we succeeded in getting on to the upper ledge after a little scrambling. Having arrived at the top, as I had anticipated, we soon came on the scent again, and away went the dog, very cautiously setting every now and again. Just ahead of us now was a stone wall. I was very much afraid that my game would rise just as I was getting over, so I made all preparation for a surprise, and at the moment the setter, who had passed the wall, was at a 'dead set.' I knew there were several birds, or some larger game, by the general activity and caution shown by the dog. I was soon over the wall, ready for anything.

"I surveyed my position in a moment. Below me was long grass, on the ledge I had left some thick and high trees, on my right a hill, also with long, rank grass, but no wood. I moved forwards a few paces, but the dog was there like a marble statue. I was very badly placed, for I could not see where the game could be. Up got six Reeves's Pheasants, splendid birds. I felt certain of two. I am sorry to say, however, I only succeeded in bagging one, which went rolling down the hill in his last struggles. I bounded after him, afraid the dog would mouth the beautiful plumage. The bird I had bagged was a cock, measuring 5 ft. 4 ins. from the bill to end of tail-feathers. From the time I first came on their scent the distance over which I worked must have been a mile; I was, therefore, glad of a rest. The birds had flown in all directions, so there was no use marking them. My left barrel had been ineffectually discharged at a fine cock, which flew straight across the valley.

"In several widely distant localities these birds have been observed and shot throughout the year on the very same slopes, and along the streams of certain small valleys, so there seems no doubt that the Reeves's Pheasant is very decidedly a resident, and in the southern portions of its range, at least, exhibiting no tendency even to a seasonal altitudinal migration. In the north, its movements are more irregular, and, like those of the ring-necked and eared pheasants of that region, governed by snow-fall. The ability of this bird to cover very considerable distances in flight enable it to seek a distant feeding-ground with great facility, and to return as speedily.

"I know of no record of its occurring at less than a thousand feet above sea-level, and usually the valleys or mountain slopes where it is found are over two thousand feet high. From this altitude it ranges upward to six thousand feet.

"The Reeves's Pheasant keeps together in families or small flocks during the winter, the attraction being a true social instinct, and not accidental association due to local abundance of food. In the spring the birds separate, and from all the facts I can gather I should be inclined to think that the birds are monogamous usually, but that occasionally two hens are mated to a cock. Trios of adult birds accompanied by half-grown young have been seen by travellers in China several times, and yet my experience with birds in captivity is that the monogamous state is more normal. This latter is a very important bit of evidence, as captivity always tends to break down any natural monogamy in birds."

W. R. Zappey writes me that in the stomachs of these pheasants he has found cultivated beans, acorns, wild persimmons, turnips, bits of cabbage and lily bulbs, these birds having been trapped near outlying villages.

The alarm cry of the Reeves is a penetrating, high cry, uttered as loudly by the female as the male.

The call-note of the bird as heard in captivity is very unlike the voice of a game-bird, and until one actually sees the bird in the act of utterance, it is difficult to believe that such a sound proceeds from so large a bird. It is exactly like the simple song of some small passerine bird, given in a very high piping key, and occasionally with a trilling quality which enhances the resemblance. This high note is repeated rapidly from six to twenty times, musically and sweetly, so that one instinctively looks among the branches for some small songster, instead of to this great pheasant, measuring over six feet in length.

The Chinese trap this species in snares, and sometimes in a kind of pit, over which fits a lid of brush, and when the trigger is set free this descends rapidly and crashes down upon the bird, engulfing it in the pit beneath. They are occasionally seen in the markets, both dead and alive, in Pekin and Hankow. Many people have praised the flesh of the wild birds, esteeming it above that of the more common pheasants.

More than once I saw tail-feathers of this bird stuck into the caps or hair of Chinese, but only as an ornament and without any particular significance. The longest tail-feathers are used in different parts of China as decorations in the head-gear of actors when these are playing military parts. Temminck was apparently mistaken when he named this bird *veneratus*, being under the impression that it was a sacred bird of the Chinese, and it is very unlikely that it played any part whatever in the origin of the Phœnix.

The Mongolians think, however, that the blood of the Reeves possesses extremely poisonous properties. They have a belief that when Mandarins consider that their rank and life are in danger, as of being put to death by order of the Emperor, these officials dip a corner of a handkerchief in the blood of this bird, so that in dire extremity they may commit suicide by sucking this dried blood.

Two travellers have told me of seeing the dried bodies of these pheasants swaying from a tall bamboo, wings and tail blowing in the breeze, and serving as a scarecrow to frighten away other pheasants.

The only account of the finding of the nest and eggs of Reeves's Pheasant is that related to me by Dr. F. R. Clifton. He was tiger-shooting within a few days' march of Ichang. One day, when out with a line of beaters trying to locate a young tiger which had just made a kill, two male Reeves were flushed, one of which rose straight ahead and went high up over the pines, while the other bird doubled back suddenly and shot past with terrific speed, dodging the beaters and the trunks of the trees with such sharp turns that the long, flowing tail-feathers seemed fairly to curl around the trunks as the bird veered past. The hillside did not have a very steep slope at this point, and was covered with a sparse growth of pines, varied with open spaces of grass, dwarf bamboo, and occasional clumps of azaleas with blossoms, both pink and deep scarlet.

As Clifton and his men encircled one of these azalea thickets, a large-sized bird ran swiftly away through the grass, and the next moment the heavy sole of the hunter's shoe crashed into the very heart of a nestful of eggs. There were seven all told, only two of which survived the catastrophe, although an eighth was later found two feet away from the nest. They were deposited in a mere shallow depression without any lining, even dead leaves were absent, and the embryos were well formed, except in the outlying egg, which had not been incubated.

The eggs of Reeves's Pheasant vary considerably in colour, being usually what the French call *mastic* or putty colour, many shells, however, being olive brown or olive cream. They are of a broad, blunt, oval shape, averaging 37 × 46 mm.

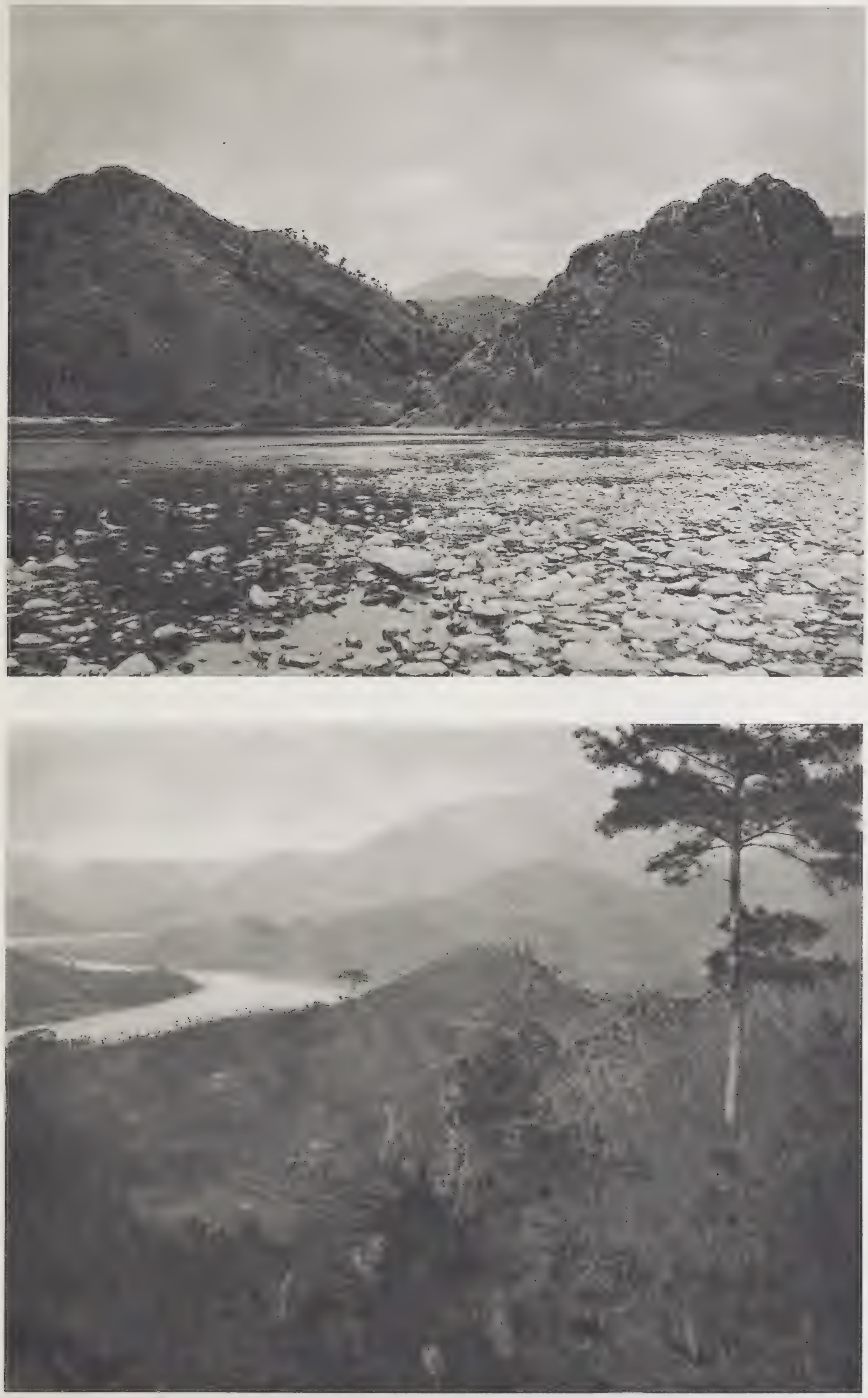
CAPTIVITY AND ACCLIMATIZATION

Long before Reeves's Pheasant had been described or even depicted in ornithological literature, when our knowledge of it was confined to Chinese drawings and to

HOME OF REEVES'S PHEASANT IN CENTRAL CHINA

The favourite haunt of the Reeves is in certain mid-reaches of the Yangtse, where black, frowning cliffs rise sheer hundreds of feet above either bank, covered with gnarled, stunted vegetation which is deformed by the elements and scanty nourishment.

Once when a line of beaters was trying to locate a young tiger which had made a kill, two cock Reeves flushed suddenly, one of which rose straight ahead, high up over the pines, while the other bird doubled back suddenly and shot past with terrific speed, dodging the beaters and the trunks of the trees with such sharp turns that the long, flowing tail-feathers seemed fairly to curl around the trunks as the bird veered past.



HOME OF REEVES'S PHEASANT IN CENTRAL CHINA

Marco Polo's brief reference, it was living in the aviary of an Englishman, Mr. Beale, at Macao, near Hong-Kong.

A traveller (Bennett, "Wanderings in New South Wales") who visited Macao at this time, writes as follows: "In Mr. Beale's splendid aviary and garden at Macao the beautiful *P. veneratus* of Temminck, the *P. reevesii* of Gray, now commonly known by the name of the Reeves's Pheasant, was seen. It is the Chee-kai of the Chinese.

"Mr. Beale's first specimen, obtained in 1808, was kept in a healthy state for thirteen years; after its death he endeavoured to procure others, but did not succeed until 1831, when four specimens were brought from the interior of China, and purchased by him for one hundred and thirty dollars; these were, I believe, taken to England subsequently by Mr. Reeves."

It seems, however, that Mr. Reeves brought only a single male in 1831, and seven years later his son introduced a female, both birds living in the Zoological Gardens in London at the same time. The male was apparently too old to breed. After some hybrids were reared from the female, she died in 1840.

The ultimate successful introduction of Reeves's Pheasant into England was due to Messrs. Stone and Medhurst, the latter being Consul at Hankow. It was very difficult at first to obtain specimens, and for years efforts were made in vain to locate living birds among the Chinese of northern China. Medhurst, however, with his thorough knowledge of the language, at last made certain of the range of this species, and success was attained when an experienced Chinese collector, armed with coloured drawings of the birds, was sent into the field.

Even then ill-luck attended the attempt, and only a single male bird survived from the first three lots sent home, the remainder all dying before they reached England. This cock lived three months. Of the fourth lot sent from Hankow, seven birds reached the London Zoological Gardens, and since then Reeves in fair numbers have almost always been obtainable from dealers.

They have bred freely in England, France and Germany, both in aviaries and at large. The species is well established in the former country, and specimens are often seen for sale in the markets, together with the Japanese and ring-necked pheasants. The first record of breeding in the London Gardens was in 1867, when the pheasants began laying immediately upon arrival, late in June, and four young birds were hatched in August.

Owing to the fact that only certain localities, rugged, broken, mountainous country, are adapted for the successful acclimatization and shooting of this splendid bird, it cannot compare with the success of the ring-neck as an introduced species in Europe. Millais has given an excellent summary ("Natural History of British Game-birds," 1909) of the present status of Reeves's Pheasant in England. He says that it is "of such a warlike disposition in spring that all other pheasants quickly give it a wide berth, and if the coverts are small it will soon drive away its more peaceful neighbours. Armed with spurs of unusual length and sharpness, the cock Reeves's Pheasant is a dangerous bird, even to its own species. I once saw a cock, in the late Mr. Cholmondeley's aviaries at Condover, kill three hens, which had been procured from China at great expense, in as many minutes. Two were struck dead instantaneously, a spur entering the back of the neck, whilst the third was cut open down the back in such a way that it had to be destroyed. At Woburn, in Bedfordshire, where the species does well in the large fir woods on sandy soil, it is a glorious sight to see them and other rare pheasants sunning themselves in the woodland rides, and uttering their whistling scream of defiance. The males are great fighters in spring. I watched a combat there one May morning for a quarter of an hour, between two grand males with five-foot tails. It was a splendid sight, as both rose six or eight feet as if by one impulse, and tried to strike downwards with beak and spur. The curious part of the affair was that neither seemed to touch his opponent, each avoiding the blow with all the arts of the skilled fencer.

"To enjoy the surpassing beauty of this species the naturalist must see Reeves's Pheasant in perfect freedom, and on ground similar to their natural habitat, and this spectacle can be witnessed properly only, as far as I know, at Guisachan in Ross-shire, formerly the seat of Lord Tweedmouth. To see a covey, for they often fly in a flock together, rise above the highest trees on a steep mountain-side, and after uttering their peculiar cry dash on at express speed, far greater than any other pheasants, is a sight one can never forget. Until the year 1890 I had seen and shot several Reeves's Pheasants, and under ordinary conditions of covert-shooting was content to consider the bird hardly a success from the shooter's point of view. During the autumn of that year, however, I received an invitation to the annual covert shoot at Guisachan, Lord Tweedmouth's beautiful seat, near Beauly, in Ross-shire, and it was there, amidst the wildest and shaggiest of Scotch scenery—in country which must to a great extent resemble the true home of the bird in question—that I had cause to alter my opinion.

"In one high wood of old Scotch firs, on a steep and broken hillside above the waterfall, the sight of these birds coming along only just within gunshot, in company with common pheasants and blackcocks, I shall never forget. I say, 'in company with,' but, as a matter of fact, as soon as one of the long-tailed skyrockets cleared the trees, he left the others far behind, and came forward at a pace which was little short of terrific. I doubt if any bird of the genus goes faster.

"Now this is all that the sportsman wants. Here we have a bird of unrivalled beauty, great hardihood, and unequalled pace, which practically fulfils all the conditions which the modern shooter requires. The only other condition which is absolutely essential to make the bird a success from this point of view, is its local environment. In this respect Guisachan is not singular, and I could name a hundred localities in Scotland, England and Wales, where Reeves's Pheasant would be certain to succeed.

"The Guisachan birds were obtained by the late Lord Tweedmouth from Balmacaan, Lord Seafield's estate near Loch Ness, where I have also seen them shot. No artificial rearing was resorted to; the birds were breeding in a wild state, and shifting entirely for themselves, except for the maize which was put down for the ordinary pheasants. At Balmacaan, where the birds were in low open woods, one may see Reeves's Pheasants killed in the way in which they should not be. Here these birds (as is the case when turned down on any ordinary English preserve) have formed most undesirable habits. It is with great difficulty they can be got to rise at all, and when this is effected they keep low, and afford no sport whatever. Now, at Guisachan all this is obviated by the rough nature of the ground. There is heavy bracken, fallen trees, mountain burns, and, above all, rough heather. These cause the birds to get up almost at once. The trees, being high and dense, assist their elevation, and force them to a respectable height from the very start.

"Reeves's Pheasant has the power to stop suddenly when travelling at its full speed, which may be estimated at nearly double that of an ordinary pheasant; and this is performed by an extraordinary movement when the bird makes up its mind to alight on some high tree that has taken its fancy. This bird may be said to be furnished with a 'Westinghouse brake,' in the shape of its tail, otherwise the feat would be impossible. By a sudden and complete turn of the body, both the expanded wings and tail are presented as a resistance to the air, and the position of the bird is reversed. This acts as an immediate buffer and brake, and by this means the bird is enabled to drop head downwards into a tree within the short space of eight or ten yards.

"Lord Ravensworth, in writing of the beauty of these Inverness-shire birds, refers to their difficulty of approach, saying that they take to their legs long before other pheasants are conscious of danger. That is quite true, for they seem as clever as deer or fox to notice the movements of men in their vicinity. One remark of Lord Ravensworth requires some comment. He says: 'Any attempt to walk up to them in brush covert is utterly hopeless, for they are exceedingly vigilant and go straight off like a dart, not more than six feet from the ground.' Most of the old cocks, which at first were found hidden in the high heather and juniper adjoining the coverts, rose far out of shot, and skimmed away to shelter, as Lord Ravensworth describes, but I noticed that many one- or two-year-old cocks and most of the hens sat very close, and rose with a disconcerting scream at our feet, and at such times they obtained an elevation similar to other pheasants. These birds were, of course, not shot, but allowed to pass into the high woods.

". . . It is quite useless to turn out Reeves's Pheasant in flat, wooded countries, for they will wander across a country as easily as another pheasant will stray over a field. A friend of mine in north Sussex purchased a cock Reeves's Pheasant from a breeder of birds, who lives near Brighton. In a few weeks he got tired of his purchase, and gave the bird its liberty. It stayed about the farm a few days, and was noticed to be missing one evening. The following afternoon it was observed sitting on the top of the pheasant pens where it had been reared, thirty miles distant."

As we have seen, Reeves's Pheasant readily adapts itself to suitable country many thousands of miles from its native haunts, its dominant characteristics being extreme wariness, strong, rapid and prolonged flight, the vernal pugnacity of the males and an unwillingness to cross with species of true *Phasianus*.

In closer captivity, when the birds are confined in aviaries, we find some of these qualities emphasized, while others disappear. Like many creatures which are exceedingly wild when given even partial freedom, these birds often become absurdly tame when confined in a small run and fed regularly by the same person. I have seen a cock perch unconcernedly on the knees of its keeper, taking meal-worms from his hand, and yet half an hour after this bird had been turned out into a large paddock, it was almost as wary and unapproachable as if in its oriental haunts. Conversely, when again confined in the autum, its fearlessness returned as abruptly as it had departed.

Although hens of the year show little or no distinction of plumage from fully adult birds, yet their egg-laying ability, at least in captivity, seems to be more limited. In an average of several instances, the former would deposit from eighteen to twenty-five, while older birds will lay from forty to fifty in a season. It is probable that this is due to a greater stimulation due to captivity, as the effect of several years' habit in attempting to replace the eggs which are continually taken away to be reared under domestic hens.

The most successful way of introducing birds such as the Reeves Pheasant to a wholly new environment, but where the ring-necked bird is already acclimatized, is to slip the fertile eggs into the nests of the latter species. The chicks seem to do as well as the birds' own progeny, being hardy, and vigorous, and a good proportion will survive in this way. Thus all danger as to the wandering away of the newly liberated adult birds is obviated. A lady in the north of England who followed this method stocked her whole estate in one season from a cock and two hens, the latter laying about fifty eggs each, most of which were reared by their wild pheasant foster-mothers.

Reeves's Pheasants are hardy birds and will do well in an aviary with no artificial heat. If their runway is too small for them to take the full amount of exercise which they need, they will require shelter in severe weather from icy winds and snow. A record of over fifty individuals confined in the London Zoological Gardens shows an average length of life of almost two years, while one bird lived five years and four months. The record of the bird which lived near Hong-Kong for thirteen years is unique. The period of incubation is from twenty-four to twenty-five days.

DETAILED DESCRIPTION

ADULT MALE.—Central crown and occiput, lower eyelid and a patch beneath it, chin, throat and a narrowing band around the lower neck pure white. Forehead, lores, featherlets of facial area and a broad line bounding this area extending backward over the ear-coverts, and forming a band around the head and upper hind neck, a broad band around the lower throat, beneath the white, widening on the breast, velvety black. Lower hind neck and sides of the neck, mantle, scapulars, inner secondaries, back and rump, golden yellow, broadly fringed with black. The whole of the mantle plumage is comparatively uniform, but on the back and scapulars, one or two oblique black cross-bars appear on the concealed portions of the feather, the background of all this basal area being white. On the lower back this entire basal area becomes black, but on the rump, the black cross-bars and white ground again become developed, with infinite variations, however.

The wing-coverts are black and white, the white on the lesser coverts being confined to a V-shaped bar, but increasing posteriorly until on many feathers the black is restricted to a wide margin and a basal shaft-streak. The terminal white is strongly tinged with gold on the greater coverts, and the visible portions of the secondaries are of the same colour, the black margins dying out on the inner feathers of this series. The larger secondaries are strongly barred with white on the concealed portions, the bars dying out on the outer web and becoming rufous on the inner web of the outermost secondaries. The primaries are more or less barred with rufous and pale buff, with chestnut spots between the buff on the outer web.

The upper tail-coverts are mottled grey, with a broad golden-brown margin and very regular broad black cross-bars, the visible ones with chestnut spots.

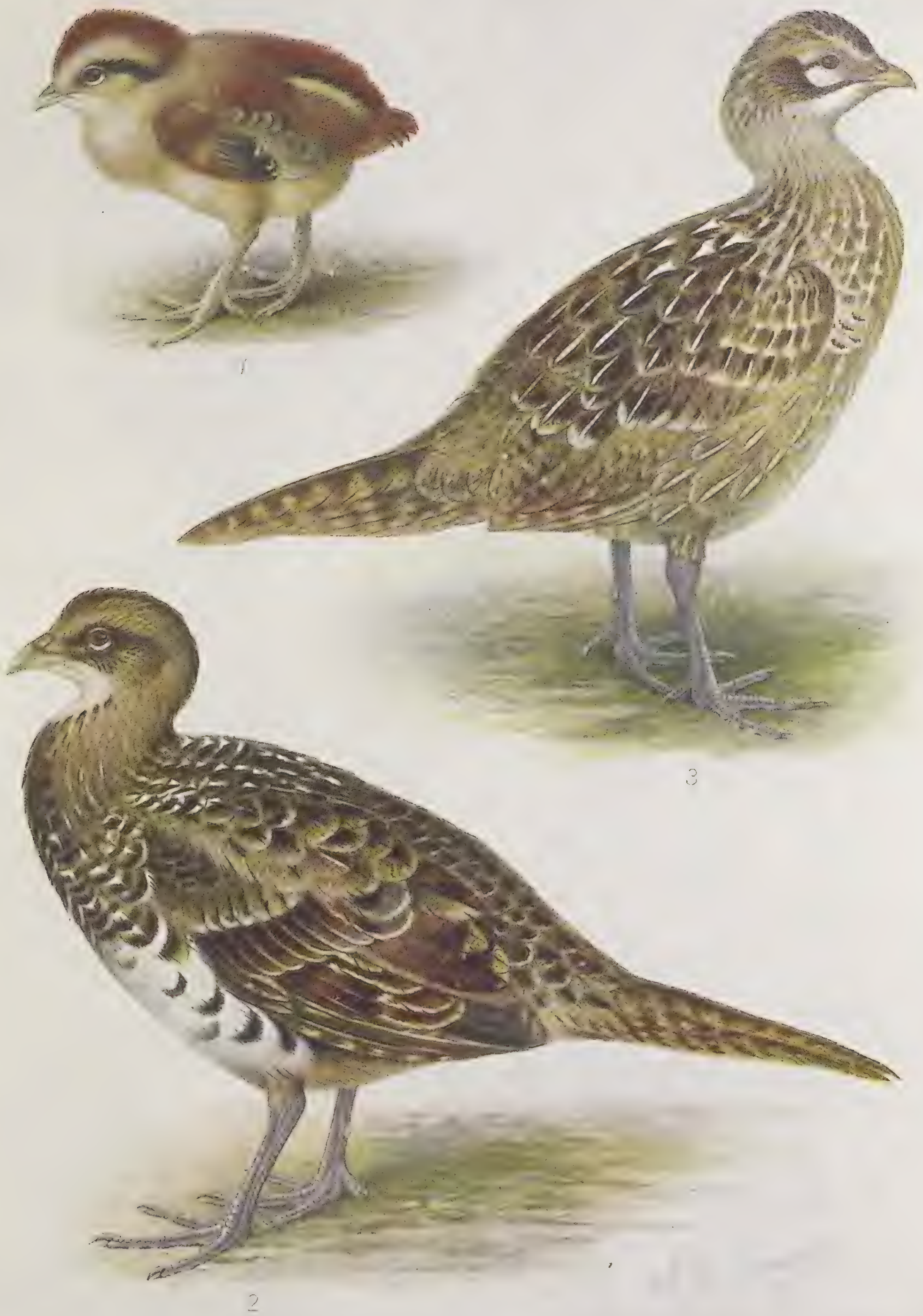
PLUMAGES OF REEVES'S AND ELLIOT'S PHEASANTS

Fig. 1. *Syrmaticus ellioti* (Swinhoe), Chick in down, one week old.

Fig. 2. *Syrmaticus ellioti* (Swinhoe), Juvenile plumage, white-throated phase, two and a half months old.

Fig. 3. *Syrmaticus reevesi* (Gray), Juvenile plumage, five weeks old.

PLATE LXII.



PLUMAGES OF REEVES'S AND ELLIOT'S PHEASANTS.

The two central pairs of rectrices are exceedingly long and narrow. They are grey along the shaft half of the webs, changing rather abruptly into golden brown on the marginal half, this colour dying out toward the extremity.

From the shaft spring wavy, broad black marks, which, toward the extremity, are complete cross-bars, containing a chestnut spot on each web. Proximally these bars become imperfect, reaching only half across the web to the margin of the grey area, and each half curving acutely inward, with a dark chestnut spot at the lateral extremity. In most individuals the corresponding marks on each web become precisely alternate, although rarely the cross-bar regularity remains. On the lateral rectrices the chestnut increases on the outer web, disappearing on the inner web simultaneously with the vanishing of the marginal brown and the extension of the black bars clear to the edge of the web. On the extreme outer rectrices the golden brown from the outer margin has spread almost or quite over the entire feather. The under side of the rectrices is very different from the upper, the light grey being dusky or quite black.

On the ventral surface of the body there is a narrow collar of black-edged golden beneath the black neckband, but almost at once the visible portion of the pectoral plumage becomes white, while a broad terminal chestnut fringe displaces the black band into a sub-terminal position. This pattern characterizes all the feathers of the breast and sides, the terminal fringe becoming very long on the latter area. On the posterior sides the white gives place to gold and the black band disappears. On the concealed portion of the feathers we find one or two black cross-bars more or less perfectly developed. The centre of the belly, flanks, thighs and under tail-coverts are dead black.

Adult Female.—Central crown and occiput black, broadly margined with chestnut. Nape with the black predominant. Facial featherlets and ear-coverts black, the latter streaked with rufous buff. Forehead, lores, lower eyelid and plumage around facial area, chin, throat well down and a broad collar around the hind neck creamy buff.

Hind neck black, with broad olive-grey extremity, a wide tapering white shaft-stripe, and the base and lateral margins chestnut. Posteriorly the black occupies the whole of the web on each side of the white central stripe, the chestnut becoming altogether basal.

On the upper back, scapulars and coverts, the shaft-streak narrows and becomes buff, the terminal portion and outer webs becoming more or less variegated and mottled with black and buff on an olive or grey background, while the black is confined to the more basal portion of the inner web.

The secondaries are black with pale buff cross-bars, much mottled, however, and variegated. The primaries are brownish black, marked with strong rufous bars on the inner, and pale buff on the outer webs.

The lower back and rump are dark smoky brown, vermiculated with buff on the visible portion of the feathers, save for a tapering shaft-stripe. The rump is greyer in general tone.

The upper tail-coverts are greyish white with much vermiculation and a well-marked black shaft-stripe. The central rectrices, which are long and tapering, are a grizzled, clouded grey, with faint shaft nodes of buffy brown. As we proceed outwards on the rectrices the mottling becomes coarser, and rather broken black-and-white cross-bars appear, while more and more chestnut develops until, on the outer pairs, this colour predominates, with irregular black-and-white mottling, and broad chestnut tips flanked with black.

The ventral plumage shows a wide grey terminal fringe followed by an irregular white cross-bar, the remaining portion of the feather being bright chestnut, much of this being visible. Along the sides the grey tip disappears and the white occupies most of the web, with a dark-bordered spot of rufous, of greater or less size, on each web. The entire belly and much of the flanks, thighs and under tail-coverts are pale buffy white.

CHICK IN DOWN.—Head orange rufous, with a large central wedge in the crown dark chocolate brown. Sides of the head and face paling into buff, and ventrally into the creamy white of the chin and throat. A narrow, very distinct line of black extends obliquely downward and back through the buff from near the posterior corner of the eye, expanding on the ear-coverts and then diminishing again, and finally ending on the lower side neck. The rufous ends abruptly on the lower neck and gives place to a cold greyish body down. The mantle is of an indefinite mottled grey, replaced by dark chocolate on the body, sides and wings. The scapular down is an impure creamy white, which extends to the rump as two broad lateral bands trisecting the chocolate of the body and sides. The terminal wing-down is buffy white, and the tail-down quite warm rufous buff. The ventral surface is creamy white, stained on the breast with buffy. Bill from nostril, 6 mm.; wing, 26; tarsus, 22; middle toe and claw, 19.

JUVENILE PLUMAGE.—Male: forehead, lores, superciliary, large sub-ocular facial patch, chin, throat and side neck white. Anterior crown quite dark, with increasing buffy tips posteriorly until the occiput shows only this colour. Lower face and ear-coverts dark brown with buffy tips. Lower neck rufous, irregularly marked with black, and a broad, elliptical shaft-stripe. On the mantle, scapulars and inner wing-feathers the rufous gives place to a cold, sandy grey, and the black is consolidated into two large spots, bounding the middle portion of the white shaft-streak. Wing-coverts pale, vermiculated greyish-buff, with the white confined to a wide terminal band. Primaries dark, with numerous bars of creamy buff. Secondaries and tail-feathers rather mottled than barred. Breast buff with shaft-stripe and terminal band of white; sides with darker buff ground, making the shaft-stripe much more conspicuous. Lower breast and belly creamy white. Bill from nostril, 11 mm.; wing, 132; tarsus, 48; middle toe and claw, 36. Spur, a low but sharp scalule.

Female: all the white markings of the male are buff in the juvenile plumage of this sex. The ventral surface and sides are creamy white with a uniform wash of buff only on the breast. The crown is quite black with narrow buffy-brown tips.

EARLY HISTORY

This was one of the birds which, long before it was seen alive or dead by any Caucasian, had for centuries been depicted in Chinese drawings. More than one early ornithologist, after considering these paintings, decided to class the abnormally long-tailed birds with the phoenix and the dragon as mere figments of the Mongolian imagination.

The first mention in literature, a reference oblique but quite recognizable, we find in the journal of the daring Venetian traveller, Marco Polo, who spent the seventeen years from 1281 to 1298 in Tartary. Eschewing the original text, and following the quaint orthography of the first English translation of his work, we read, "There be plenty of Feysants and very greate, for 1 of them is as big as 2 of ours, with tayles of eight, 9 and tenne spannes long, from the Kingdom of Erguyl or Arguill, the W. side of Tartary." There is no other "Feysant" than Reeves to which this description could well apply.

Over five hundred years passed without a further reference to the bird. The first descriptions in ornithological works were based upon drawings made at second-hand and tail feathers. Latham in 1823, calling the bird the Bar-tailed Pheasant, says: "I had an opportunity of seeing a bundle of thirty or forty of these tail feathers, which were brought from China, and I found amongst them specimens of every length from 18 inches to 7 feet." The first good likeness of this pheasant was published by Temminck in 1830 in his "Planches Coloriées" under the erroneous name of *veneratus*. The previous year J. E. Gray named it after Mr. Reeves.

SYNONYMY

Phasianus superbus Vieill. (nec Linn.) N. Dict. d'Hist. Nat., XI. 1817, p. 40; Jard. Nat. Lib. Orn., IV. 1834, p. 202; Lamprey, Proc. Zool. Soc., 1862, p. 220 [N.E. of Pekin].

Bar-tailed Pheasant Latham, Gen. Hist., VIII. 1823; p. 196, pl. CXXIV.

Phasianus reevesii J. E. Gray, in Griff., ed. Cuv., III. 1829, p. 25; id. Ill. Ind. Zool., I. 1830–32, pl. 39; G. R. Gray, List of Birds, pt. III. Gall., 1844, p. 24; id. Gen. B., III., 1845, p. 497; Sclater and Wolf, Zool. Sket. 2, 1861, pl. 33; Sclater, List of Phas. 1863, p. 5, pl. 1 [North and Central China]; Swinhoe, Proc. Zool. Soc., 1863, p. 307; Saurin, Proc. Zool. Soc., 1866, p. 437 [Chi-li]; David, N. Arch. Mus. Bull., III., 1867, p. 37 [near Toung-Liu]; Gray, List Gallinae Brit. Mus. 1867, p. 28; Bartlett, Proc. Zool. Soc. 1868, p. 115; David, Proc. Zool. Soc., 1868, p. 210; Gould, B. Asia, VII. 1869, pl. 33; Sclater, Proc. Zool. Soc., 1869, p. 628; Gray, Hand-list Birds, II. 1870, p. 258; Bennett, Wanderings in New South Wales, II. 1834, p. 55; David, N. Arch. Mus. Bull., VII. 1871, p. 11 [Pekin, Sze-chuen]; Elliot, Monog. Phas., II. 1872, pl. XI. [text]; Garrod, Proc. Zool. Soc. 1873, p. 468; Garrod, Proc. Zool. Soc., 1873, p. 640; David and Oustalet, Ois. Chine, 1877, p. 413 [Mts. N. and E. of Pekin and between Shen-se, Honan and Sze-chuen]: Ravensw. Tr. N. Durh., VII. 1878, pt. I. p. 168; Lilford, Proc. Zool. Soc., 1880, p. 421; Goodchild, Proc. Zool. Soc., 1886, p. 193; Creagh, Ibis, 1886, p. 382; Günther, Proc. Zool. Soc., 1887, p. 503; Styan, Ibis, 1891, pp. 329, 499 [Lower Yangtse]; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 357; Brandis, Jour. für Orn., 1896, p. 301; Grant, Hand-book Game-birds, II. 1897, p. 37; Tegetmeier Bull. Brit. Orn. Club, VII. 1898, p. xxvii,; Tegetmeier, Ibis, 1898, p 290; Rothschild, Bull. Brit. Orn. Club, XI. 1901, p. 53; Günther, Proc. Zool. Soc., 1904, pt. I. p. 371; Günther, Proc. Zool. Soc., 1904, pt. II. p. 129; Baturlin, Ibis, 1904, pp. 378, 407, 408, 413; Tegetmeier, Pheasants, 1904, p. 178; Rothschild, Bull. Brit. Orn. Club, XIV. 1904, pp. 36, 37, 58; Rothschild, Bull. Brit. Orn. Club, XXI. 1907, p. 24; Millais, Nat. Hist. Brit. Game-birds, 1909, p. 107; Mitchell, Proc. Zool. Soc., 1911, p. 521; Thayer and Bangs, Mem. Mus. Comp. Zool. Harvard, XL., 1912, p. 143.

Phasianus veneratus Temminck, Pl. Col. V., 1830, pl. 5 [no. 485]; Lesson, Traité d'Orn., 1831, p. 496; Jard. Nat. Lib. Orn., IV. 1834, pl. XVI.

Syrmaticus reevesii Wagler, Isis, 1832, p. 1229; Swinhoe, Proc. Zool. Soc., 1871, p. 398; Sharpe, Hand-list Birds, I. 1899, p. 38; Heinroth, Zool. Beobachter, 1908, p. 21; Beebe, Zoologica, I. No. 15, 1914, p. 278.

SOEMMERRING'S COPPER PHEASANT

Syrmaticus soemmerringi soemmerringi (Temminck)

NAMES.—Specific: *soemmerringi*, named for M. le professeur de Soemmerring. English: Copper or Soemmerring's Pheasant. French: Faisan de soemmerring. German: Sömmerring's Fasan. Native: Akayamadori (Red Mountain Bird, Japanese).

BRIEF DESCRIPTION.—Male: General colour above rich chestnut, the margins of these feathers and those of the breast purplish carmine, changing to fiery gold; ventral plumage vinous chestnut; the basal part of all the feathers black, visible only on the wing-coverts and under parts; very long central tail-feathers, with nine to sixteen wide-set, very narrow black cross-bars, the interspaces being rich chestnut. The lateral tail-feathers are tipped with black. Female: Crown dark brown, edged with dull rufous; ground colour of upper parts black, with a dominant rufous tone on the upper mantle, grey on the lower mantle, and a mottling of grey and buff on the back and rump; the mantle and scapulars show light shaft-streaks, the back and rump dark ones; chin and throat buff, the lateral feathers tipped with black; breast pale buff, shading into grey, with semi-visible basal black markings; posterior under parts buffy white; central tail-feathers faintly mottled rufous, with more or less distinct lateral grey bars; lateral tail-feathers solid chestnut, with a sub-terminal black and a terminal white bar.

RANGE.—South-east coast of Honda; Eastern Kiusiu, Japan.

GENERAL DISTRIBUTION

THIS form of the Japanese Copper Pheasant was known many years before the others, and, perhaps wrongly, it has monopolized most of the synonymy and the very vague notes which up to the present time have composed the sum total of our knowledge of these beautiful birds. Nevertheless, it is far from being the most common or widely spread of the Copper Pheasants.

Densely populated as are the various islands of Japan, yet the exact distribution of bird life is still almost wholly unknown, and even the best native authorities can give one but little help. By means of examining the markets in many towns and villages, and noting or purchasing locally shot pheasants, and from numberless short trips into the country from various points, I was able to outline roughly the general distribution of the different forms of "Yamadori."

Soemmerring's Pheasant, in the great island of Honda, is apparently confined to the south-east coast, ranging as far north as the Izu peninsula and occurring in an unbroken line as far south as Kobe on the Inland Sea. From here southward *soemmerringi* and *scintillans* occur in equal numbers. In Kiusiu, just south of Moji, the former again increases, and throughout the extreme western part of this island one finds pure *soemmerringi* dominant.

GENERAL ACCOUNT

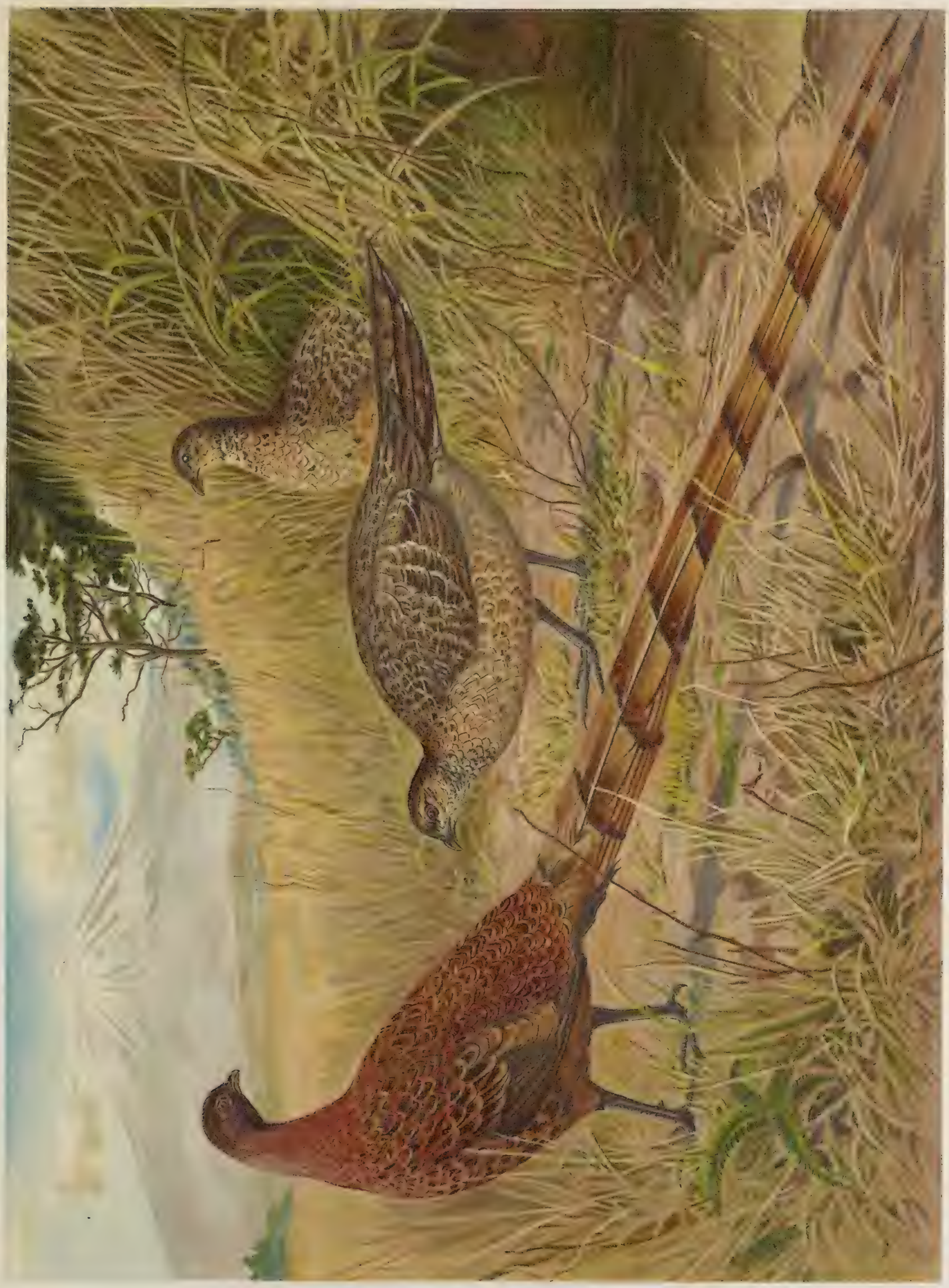
As we have seen, this form is far more local and rarer than *scintillans*, but its early recognition and comparative abundance in collections is doubtless due to the fact

SOEMMERRING'S COPPER PHEASANT

Syrmaticus soemmerringi soemmerringi (Temminck)

Like the architecture of the Japanese, the solitary majesty of Fuji, the beauty of the cherry-blossoms, the delicacy of line of the tori—this pheasant seems a thing of unusual beauty.

As we see it beside a stream, or silhouetted against the misty grey slopes of the snow-covered mountain, it fairly glows as a mass of purplish carmine, changing at every turn to fiery gold. Its vitality is tremendous, and when a half-dozen cocks bouquet with a roar of wings from a plot of dry grass, the other beauties of Nippon are eclipsed.



SOEMMERRING'S COPPER PHEASANT.

of its occurrence in the immediate vicinity of two of the largest sea-ports, Yokohama and Nagasaki, which, more than any other places in Japan, are visited by foreign travellers. In the markets of these two places one will find *soemmerringi* far more abundant than *scintillans*. A short distance into the mountains, however, takes one completely beyond the range of the former.

The habits of the two are so similar that I shall let the account of the more widely spread and abundant *scintillans* stand as typical of both *soemmerringi* and *ijimae*. The only recognition of this comparative phenomenon which I have found in literature is an implied realization of the fact in Ogama's "Hand-List of the Birds of Japan," where he gives *scintillans* precedence over the two other forms, and correctly restricts the widespread name of Yamadori to this form.

The very meagre notes which have been recorded of this species are valueless, except as personal records. They add nothing to the actual life history of the bird, and, indeed, most of them are very evidently composite—a description of a Copper Pheasant combined with the call-notes of the green pheasant. This is what we might expect, since the two birds inhabit, in many cases, the very same fields and hills.

I once surprised a flock of six birds, two males and four females, near a little village in Izu, and had an excellent view of them as they scaled away. There was not a hint of white upon the plumage of the males. My interpreter learned that this flock had been seen within the small area of this valley throughout the winter, and the natives had in vain tried to trap them.

Walking about the western slope of the hill, I found plain traces of their long occupation. Their tracks were everywhere along the muddy margin of a little stream, and abundant but old "sign" beneath a good-sized pine-tree revealed their one-time roosting-place. The haunts of this flock of birds resembled some of the less luxuriant slopes of the Himalayas in southern Garhwal. Dwarf pines were dotted more or less thickly over the slopes and up to the knife-like saddles and ridges. In sheltered places dense growths of pine appeared, and a low but thick undergrowth of grass and bamboo covered the rather scanty soil. This growth was pale buff at this time of year, in sharp contrast to the deep green of the conifers. Tits and siskins twittered in the cold wind, and jackdaws buffeted with the gale which they encountered when they rose above the shelter of the ridges. Aside from these, the country seemed bleak and deserted. Only the hum of an occasional fly in a sunny, sheltered hollow hinted of the warm springtime which would soon transform all this landscape.

Near Nagasaki I found the pheasants in much the same environment, but even more barren and desolate, although later in the year. I had time merely to reach the edge of a wood composed chiefly of oaks, and spend an hour or two in search of the birds, one of which I shot. I had just taken my glasses from a long, irregular line of wagtails—migrating birds which drifted aimlessly past, uncertain whether to alight or to keep on, when a pheasant ran out from a thicket near by, and with a rush of wings took to flight. I secured it, and found it to be a typical Soemmerring without a trace of white. This was a bleak day in early February, and the only animal food it had been able to find was several earthworms. In the crop were thirty-eight acorns of medium size, besides several small seeds. The market birds which I examined had been feeding upon grubs and many brown lepidopterous chrysalids.

DETAILED DESCRIPTION

Adult Male.—Head chestnut brown, the feathers dark at the base. On the occiput a narrow terminal fringe of metallic purple appears, changing to a fiery copper, which increases until most of the visible portion of the neck all around and the mantle are of this colour. On these areas the black has pushed up in the form of two elongated marks on each web, a pattern which characterizes the entire body plumage, the black being visible in the undisturbed plumage of the wing-coverts and much of the ventral parts.

The entire back and rump are characterized by the purple-copper iridescence being confined to the central part of the terminal fringe, while the lateral areas are paler, buff in some lights, changing to fiery yellow gold.

The wing-coverts and under parts are non-iridescent; the former rich chestnut, while the ventral plumage is paler, more of a greyish vinaceous.

The primaries are brownish black, irregularly barred, especially on the outer web, with pale rufous buff. The secondaries have several bars and a large terminal area on the outer web chestnut, while the concealed basal parts and the inner webs are conspicuously marked with white. This dies out on the tertiaries in the form of very pale outer margins. These white alar markings show very conspicuously on the under surface of the wing, most of the under wing-coverts and the axillaries being pure white.

In extreme individuals the central tail-feathers show fourteen to sixteen narrow, black cross-bars, the wide interspaces being rich dark chestnut, paling slightly on the anterior border of the black bars. The outer four pairs of tail-feathers are almost unbarred, but tipped with a wide zone of black. The tail-feathers are eighteen in number and extremely graduated, from the outer pair, which is a bare 100 mm., to the central ones, which sometimes reach a length of 925 mm., over nine times the length of the former.

The mandibles are yellowish horn, darker toward the base. Facial skin scarlet, covered thickly with papillae, quite bare of featherlets except for the lower eyelid, and extending as a small roundish area on the cheek, which is densely covered with white featherlets and bounded with dark chestnut. Iris rich hazel brown. Feet and legs greyish or dark yellowish horn colour. The spurs are quite stout, but not very long, never more than 10 or 12 mm.

Bill from nostril, 16 mm.; length, 1108; wing, 215 to 230; tail, 660 to 925; tarsus, 64; middle toe and claw, 62.

Variations of Adult Males.—From individuals such as I have described, with no trace of white on the visible portion of the feathers, and with the yellow gold of the back and rump but slightly differentiated from the copper, we find a perfect gradation to the extreme type of *scintillans*. In Kiusiu, however, to the west and south, the gradation is toward *ijimae*, with the white becoming concentrated on the lower back and rump, and eliminated from all the remaining portion of the plumage.

Adult Female.—Crown and occiput dull brown, edged with rufous buff. Back and sides of the neck rufous, shading into vinaceous toward the tip of each feather. The mantle is irregularly and sparsely mottled with black, and with two large, lateral, rounded, subterminal spots of the same colour. Posterior mantle, scapulars and wing-coverts more finely mottled, grey rather than rufous or vinaceous, and with conspicuous

JAPANESE HOME OF THE COPPER PHEASANT

These beautiful birds like the shelter of low grass and bamboo, and come into the open to feed upon grubs and insects and acorns. They haunt the same places throughout the heat of summer and the bitter winds of winter, often roosting in trees and feeding along the margin of streams, almost always within sight of the splendour of Fuji.

JAPANESE HOME OF THE COPPER PHEASANT

buffy shaft-streaks. Lower back and rump sandy rufous on the visible part of the feathers, finely vermiculated with black, with a wide, wedge-shaped, black shaft-streak.

Primaries like those of the male. Secondaries with pale buff instead of chestnut markings. Upper tail-coverts much like the rump. Central tail-feathers rufous centrally, with margin and indistinct cross-bars of grey, all mottled with brown and black. Lateral rectrices solid chestnut, with two oblique bars, a sub-terminal one of black and a wide terminal band of white, the latter extending for some distance down the outer margin. The visible portion of the under tail-coverts pure white. Tail-feathers eighteen in number, very short in comparison with those of the males, the inner only twice as long as the outer pair.

Chin and throat creamy white, the feathers of the lower face and side throat tipped with black. Breast pale rufous buff, tipped with greyish and irregularly marked and spotted with black. Posteriorly the ground colour becomes chestnut and a wide white terminal area appears.

Facial area quite thickly covered with short buff and black featherlets, the skin showing reddish beneath. A sub-ocular patch white. Upper mandible chiefly dark horn, paler toward the tip; lower mandible yellowish horn. Iris dark hazel brown. Legs yellowish horn, toes darker. Spur a low but sharp scalule.

Bill from nostril, 15 mm.; length, 620; wing, 210; tail, 200; tarsus, 62; middle toe and claw, 59.

CHICK IN DOWN.—Centre of crown and nape chestnut, becoming darker on the hind neck, but reverting to uniform chestnut on the wing-coverts and remaining upper parts. A short buffy-white line runs down on each side of the back and rump. Forehead, lores and broad band extending over the eye and down the side of the nape, rich creamy buff. A line of dark chocolate arises on the side neck and extends upward and forward across the ear-coverts and on to the posterior corner of the eye. It appears on the anterior side of the eye as a narrow margin to the eyelid. Face and under parts pale creamy-white, the breast tinged with pale russet. Tips of the newly sprouted flight-feathers reddish brown, indistinctly mottled with black, with dull buff tips. Greater coverts with this terminal band, paler and very conspicuous. A three-day-old chick has hazel irides, yellow-brown beak and legs. Culmen from nostril, 5 mm.; length, 110; wing, 40; tarsus, 22; middle toe and claw, 22.

SYNONYMY

Phasianus soemmerringi Temminck, Pl. Col., V. 1830, pls. 8, 9 [nos. 487, 488]; Lesson, Traité d'Orn., 1831, p. 496; Jard., Nat. Lib., Orn., IV. 1834, p. 205, pl. xvii; Gray, List of Birds, pt. III. Gall. 1844, p. 24; id. Gen. B., III. 1845, p. 497; Cassin, in Perry's Exp. Jap., II. 1856, p. 225, pl. 2 [S. and middle of Hondo]; Sclater and Wolf, Zool. Sket. 2. 1861, pl. 32; Sclater, List of Phas., 1863, pt. 5, pl. 2 [Simoda, Hondo]; Sclater, Proc. Zool. Soc., 1865, p. 256; Murie, Proc. Zool. Soc., 1865, p. 746; Gray, List Gallinae Brit. Mus., 1867, p. 29; Sclater, Proc. Zool. Soc., 1869, p. 628; id. Hand-list Birds, II. 1870, p. 258; Gould, Birds Asia, VII. 1867, pl. 37; Elliot, Monog. Phas., II. 1872, pl. xii [text]; Blakiston and Pryer, Ibis, 1878, p. 226 [Hondo]; id. Trans. As. Soc. Jap., 1882, p. 126 [not found in Yezo]; Seebohm, B. Jap., 1890, p. 370 [Kiu-siu]; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 336; Grant, Hand-book Game-birds, II. 1897, p. 34; Sharpe, Hand-list Birds, I. 1899, p. 38; Nehrkorn, Katalog der Eiersammlung, 1899, p. 194; Cronau, Der Zool. Garten, XL. 1899, p. 106; Dresser, Manual Palaearctic Birds, pt. II. 1903, p. 667; Tegetmeier, Pheasants, 1904, p. 197; Rothschild, Bull. Brit. Orn. Club, XIV. 1904, pp. 36, 38, 58; Buturlin, Ibis, 1904, pp. 377, 412, 413; Hesse, Jour. für Orn. 1907, p. 216; Rothschild, Bull. Brit. Orn. Club, XXI. 1907, pp. 24, 25; Buturlin, Ibis, 1908, p. 584; Ogama, Annotat. Zool. Japon., VI. 1908, p. 356; Mitchell, Proc. Zool. Soc. 1911, p. 521.

Syrmaticus soemmerringii soemmeringii Beebe, Zoologica, I. No. 15, 1914, p. 283.

SCINTILLATING COPPER PHEASANT

Syrmaticus soemmerringi scintillans (Gould)

Names.—Specific: *scintillans*, from the Latin *scintilla*, a spark, sparkle. English: Shining or Scintillating Copper Pheasant, Honda Copper Pheasant. Native: Yamadori (Mountain Bird, Japanese).

Brief Description.—Male: Similar to *soemmerringi*, but in general much paler red, the pigment of the entire plumage thoroughly diluted with white; in extreme individuals the entire lower mantle, back, rump and wing-coverts show broad latero-terminal white spots, giving the plumage a streaked effect; posterior under parts broadly margined all around with buffy white; tail-feathers very pale, with narrow blackish bars, followed by narrow chocolate bars and wide interspaces of pale rufous fading posteriorly into buffy white and mottled with black. Female: This sex shows no constant characters separating it from the corresponding sex of *soemmerringi*.

Range.—Honda and north-western Kiusiu.

THE BIRD IN ITS HAUNTS

The little Japanese pony that pulled my rough country cart was altogether too full of ambition. He persisted in breaking into a full run at every opportunity, and as I was jammed into the back seat beyond all possibility of escape, it was disheartening to be whirled around corners on one wheel with a constant chance of overturning. I could thus pay but little attention to the country through which I was passing. At last, however, my driver let the beast have his way at the foot of an extremely steep hill, and before we had reached the summit the horse was walking and his spirit was broken for the day.

We had left the toy villages and paper houses behind and were now in the open country. Armed with an elaborate official passport, I was bound for one of the Emperor's preserves, which in this case happened to be a training-ground for troops as well. Our road seemed never level. We went up and down over a mass of intersecting ridges, radiating in all directions. The few less steep slopes were all converted into the usual series of terraced rice-fields, but these became more and more infrequent, and finally nothing but wild vegetation met the eye. This was my third attempt in this region after several trips made in vain in search of a Copper Pheasant's nest.

I now gladly left the cart, and began a long cross-country march. After a few steps I heard the distant crow of a pheasant—one of the green *Phasianus*—and throughout the day this sound was the one most frequently heard. I was in search of the northern Copper Pheasant, *scintillans*, however, and paid no attention to the more common species.

As I walked along through the symmetrically moulded valleys, the slope on one hand would be covered with a dense, drooping garb of soft ferns, green, russet and buff blending harmoniously together. The opposite hillside might support a waving,

SCINTILLATING COPPER PHEASANT

Syrmaticus soemmerringi scintillans (Gould)

(Left-hand figure)

IJIMA'S COPPER PHEASANT

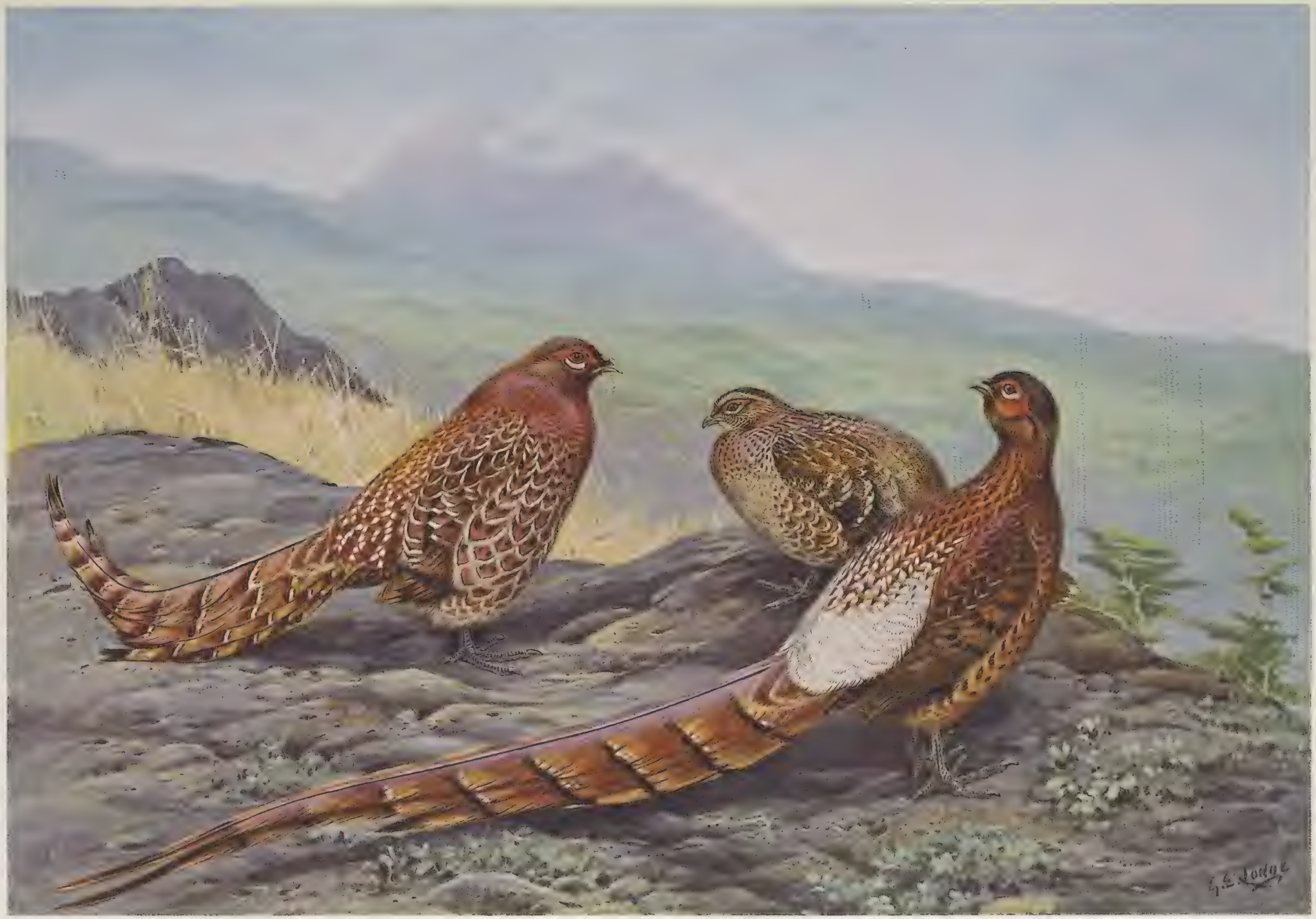
Syrmaticus soemmerringi ijimae (Dresser)

(Right-hand figure)

As the northern Copper Pheasants are seldom out of sight of the cloud-swept snows of Fuji, so the southern satin-backed birds, by raising their heads, can always watch the billowing blue smoke from the waistcoat-pocket crater of Kirishima-yama.

Foxes, weasels and especially half-wild house cats are among the enemies which force these birds to roost in trees. In spite of their brilliancy of colouring, Copper Pheasants are able to keep concealed, and a pair or two may inhabit a tiny grove of trees or shrubs on the rocky summit of a hill, and remain quite unknown to the Japanese farmers whose fields surround them on every side.

PLATE LXIV.



SCINTILLATING COPPER PHEASANT. IJIMA'S COPPER PHEASANT.

feathery expanse of bamboo, graduated from green at the base to pale brown at the tips. A few hundred yards farther on rose a dense, black mat of cryptomeria and pines.

In the heart of the preserve I found myself in a curious landscape. A multitude of little rolling knolls, all thickly wooded or covered with brush, isolated by a flat grassy plain, much of which had been broken down by the tramping of soldiers and the hoofs of horses. From first one direction, then another, there came the broken crow of pheasants from these knolls.

I searched one knoll carefully but found nothing of interest. A second turned out to be a kind of outjutting bit of forest connected with a reedy marsh of considerable extent. A high wind had suddenly arisen, and the rustle of leaves masked any noise of my advance. I crept from tree to tree and at last reached the edge on the marsh side. I peered behind the last pine and was astonished to see just beneath my face a nestful of eggs. There were five pale-creamy shells, well sunk in a setting of dead leaves. I did not wait for a second glance, but retreated at once and circled around to the left until I was at right angles. Here I found three cryptomerias growing close together, the great trunks forming an admirable shield, and here I mounted my field battery of binoculars and awaited developments.

At the edge of the marsh was an extensive rookery, and the sudden gale of wind was playing havoc with the great stick nests. The day before, rain had fallen in torrents, and now this wind, howling through the tree-tops, was the last of the storm. Far, far away through the clean washed air I could see the majestic summit of Fuji, standing out like shining new porcelain against the deep blue of the sky. The rooks hung croaking in mid-air watching the dissolution of their homes, sticks mingled with broken eggs hurtling down among the reeds.

An hour passed and the gale died down as quickly as it had arisen, the swaying trunks and whipping branches coming to rest and the rooks betaking themselves elsewhere. Titmice swung upside down before me, or clung to the mossy trunks, spying me out, but taking me philosophically, not screaming "thief" to all the world, as the well-named babblers of India would have done.

Behind me is a thin growth of spindling bamboo, four to eight feet in height, with cryptomerias, pines and maples. The debris on the ground is chiefly of dead, blanched, linear bamboo leaves and a maze of pine needles, with a scattering of roundish cones. Flowers are a few violets, a bluish spike of minute flowerets and a yellow clover-like blossom.

A black-and-white-headed bunting sings near by, flirting its white outer tail-feathers, and a dove coos sonorously among the pine branches overhead. Snakes in numbers come out into the spots of warm sunlight and coil in contentment on the dry leaves, dark brown in colour, much like the leaves, but with conspicuous shining black markings on the neck.

In my interest I have forgotten the nest for a few moments, and when I again glance through the glasses the eggs are gone. At least that is my first impression, and restraining my inclination to leap up and search for the marauder, I look again and resolve the body of the sitting bird. A beautiful picture of the forest debris she makes, a marbling of grey and rufous and black, and my naked eye absolutely refuses at this distance to separate her from her surroundings.

My glasses show even her beady eyes, and well concealed and distant as I am, I know she has spied me out and her glance never for a moment wavers. I am delighted to recognize her as a Soemmerring hen, not the more abundant green pheasant. Once I hear her mate call, but only once, and though I wait long he does not appear.

Soon the air is filled with strange sounds. The distant booming of guns, the shrill blast of a bugle, a sudden united chorus of yells, and then, through an opening vista, I catch the glint of steel from sword or bayonets. Then a troop of cavalry dashes past, unseen but with loud thud of hoofs, and I realize that we, the sitting pheasant and myself, are in the centre of a sham battle. For a half-hour the hubbub continues, and then the seat of war shifts and we are left again in peace.

Finally I take my leave, quietly, without further intrusion, and slip away as dusk is closing down. The following day I return and photograph the nest, and watch until the bird returns again to her home. Nothing of tragedy came to this pheasant while I remained in this region. Isolated from the world by armed men, she was perfectly safe, for their guns were made for bigger game than her slim body. Her chicks may even now be calling from the wonderful valleys which stretch far up the sides of the sacred mountain of Fuji.

GENERAL DISTRIBUTION

Honda may be said to be the centre of distribution of this form, extending from well up on the slopes of even the highest mountains to the very sea coast. It is, however, as we shall see, not nearly as common on the low-lying coastal areas as among the hilly central regions, being replaced in the former zone by the green pheasant (*Phasianus versicolor*). In Kiusiu it occurs in the north-west, and eastward to the central part of the island. To the south-east it merges into *soemmerringi*, and in the south-west into *ijimae*.

GENERAL ACCOUNT

The Scintillating Copper Pheasant, although the most widely distributed of all its forms, yet shows a decided preference for certain types of country. Its range coincides closely with that of the green pheasant, but when it comes to particular localities the two species more often divide the country between them than share it. The latter haunts the vicinity of cultivation, and depends for much of its food upon the grain and other crops of the Japanese farmer. The Copper Pheasants, on the contrary, keep away as much as possible from all signs of human habitation, and although this is not wholly possible in these small, densely populated islands, yet the general statement holds true.

Especially in the warmer months these birds keep to the hilly and mountainous districts, especially where there is an abundance of well-grown forest with thick undergrowth of low bamboos and other vegetation. Wherever, in Honda, densely wooded rough hillsides are found with valleys watered by a running stream, we may be fairly certain of finding Copper Pheasants.

Unlike their relation *ijimae* in Kiusiu, these northern birds never descend to cultivated fields while the weather permits them to remain at higher altitudes, and I have never heard of them complained of as working injury to crops. Although the Copper birds range much higher than the green pheasants, and in general are a mountain-loving species, yet where there is a moderate amount of cultivation, even on the coast, these birds may be found at sea-level closely associated with the true *Phasianus*.

Japanese crops as a whole are those requiring an abundance of water, or even, in the case of rice, an actual periodical flooding. Thus, although every inch of available land is appropriated, and has been for generations, yet on rocky slopes, and on the tops of hills and mountains, the forests have been carefully conserved in startling contrast to the miles of barren wastes in China. In these primitive isolated or narrowly linear tracts the native fauna still holds its own, often greatly to the trouble and loss of the farmers in the neighbouring valleys. Here the Copper Pheasants make their home, and here they must often be subjected to severity of weather, especially in the northern parts of Honda. As a result the birds in winter are forced to descend to lower levels, and at this season may sometimes actually be found to outnumber the green pheasants at the lower levels. In the spring the Copper birds again ascend to breed among the pines and bamboos of the mountains.

In more sheltered parts of the country the pheasants are decidedly resident, and throughout the year, where not shot or persecuted, may be found in relatively constant numbers in the same coverts or on the same valley slope. The birds are very generally distributed, and while not abundant everywhere, yet in suitable cover, where one is seen or heard, there will in all probability be found others.

Copper Pheasants are not especially sociable birds, and almost never associate in true flocks, except where there is a temporary enforced assemblage for purposes of feeding. The young remain with their mother throughout the winter long after they have acquired adult plumage.

In comparison with the green pheasant the Coppers are extremely silent birds. In all the accounts thus far written, the notes of the former bird have been accredited to the latter. Kiji is the native name for *versicolor*, the green bird, and is based on the broken crow, which is so similar to that of the common or ring-necked pheasant. The Copper Pheasant, as far as I could ascertain, crows only during the mating season, and then in the morning and evening.

The gait of these birds is not especially pleasing. As I have watched them in a wild state, their carriage seemed to have less grace than that of more short-tailed species. So wary are they, however, that even in captivity one can seldom see them walking with perfect freedom—they are almost always partly crouching or swiftly running. Their flight is much stronger and more sustained than that of the green pheasant, and serves to carry them across any valley, however wide, or in one burst of speed from high up on a mountain-side to the heart of the valley far below.

The food is of the usually varied character. I have observed earth-worms, small molluscs, insects of almost all orders, and other animal food composing perhaps one-third of their total diet, while berries, grain, acorns, nuts, seeds, fern-tops, tender leaves, moss, and the petals of flowers are all eaten in quantities, the latter occasionally filling the crop to the exclusion of all else. Both sexes scratch vigorously in the earth, but with no system, even where grubs and other food are abundant, digging shallow holes here and there with no such methodical sequence between them as we observed in the impeyan and the cheer.

These birds roost in trees, usually in pines, even where maples and oaks are abundant. The roosting branches used respectively by a solitary male and by three females or young birds were not more than fifteen feet above the ground, in trees growing on steep slopes.

I observed no association with mammals or with small birds, as is so common a habit with other pheasants. The very places which serve as shelters for the Copper Pheasants are also tenanted by foxes and weasels, and the very limited areas affording such shelter well accounts for the great timidity of these birds. They must, indeed, ever be on the watch to evade the attacks of their four-footed, and as I had good evidence in Kiusiu, of their winged enemies. The half-wild house cats probably do not work such havoc among these lovers of higher regions as among the green pheasants.

Even when warned well in advance of danger, the hens are not as habitual squatters as we should expect from their dull mottled plumage. The males are off at once, running with great rapidity or flying headlong. The females squat for a moment, then run a short distance, then squat until they gain the dense shelter of bamboos or other vegetation.

HOME LIFE

The Scintillating Copper Pheasant varies considerably in the date of nesting, the eggs being deposited much earlier in the year in the more sheltered warmer parts of southern Honda. In the latitude of Tokyo the birds nest about April, the hens usually beginning to sit by the middle of the month.

Seven to thirteen eggs are deposited in a hollow in the ground, with lining composed only of what leaves or moss happened to be in the depression. The nests are invariably placed close to the base of a tree, a pine in all the cases which have come under my observation. Seven seems to be a rather usual number of eggs, for in five instances in captivity, two in my own experience, and three recorded in the "Bulletin de la Société Acclimatation," a hen Copper Pheasant laid fourteen eggs in groups of seven in two, and in one case in three consecutive years. The three nests of wild birds with completed sets which I have found, or have been taken by Japanese, contained nine, ten, and thirteen eggs respectively. The eggs are uniformly cream-coloured, and measure from 30 to 39 mm. in breadth by 46 to 49 in length.

I saw no fighting among wild birds, but Copper Pheasant cocks in captivity have most unenviable reputation for pugnacity, attacking and killing not only cock birds of their own and of other species, but even the hens. The particularly nervous and wary character of these pheasants probably accounts for this. Their spurs are stout, but not of great length, and it is difficult to believe that they indulge in battles of nearly so savage a character as those of the firebacks.

What evidence we have in captivity points to a decided polygamy, but from what I have seen and heard of the pheasants in a wild state, I believe they are as often monogamous as polygamous.

The incubation lasts about twenty-four days, and the chicks are strong and can run with considerable speed a few hours after hatching. As soon as they can move readily the hen takes them some distance from the nest, and I learned in one instance at least that even if the last egg was chipped at noon, that very night the brood would be hovered more than twenty yards away. In this case the last-hatched weakling was left to his fate. This habit of leaving the vicinity of the nest as soon as possible is a widespread one among gallinaceous birds. It may, perhaps, best be explained by the added danger which would result from the odour of blood and egg liquids. A passing fox or other animal would nose out such a tell-tale scent from a distance of many yards, where the day before he might have passed close to the sitting hen and her unhatched eggs without detecting a particle of odour.

The young birds grow rapidly, and by November most of them are hardly distinguishable from their parents. Apparently only a single brood is reared, although from the fact that occasionally birds of younger growth are shot in the autumn, a second laying probably takes place when the first is accidentally destroyed. The male bird has been seen associating day after day with a single hen and her brood, evidence of some weight in favour of monogamy. The hen and her brood roost together throughout the autumn and winter.

RELATION TO MAN

Pheasants in Japan do not suffer to such an extent from systematic trapping as in many other countries, and Copper Pheasants are even more immune than the green pheasants, owing to their haunts being more inaccessible and farther removed from the vicinity of villages and hamlets. Yamadori seem never to have been so numerous as the latter, owing perhaps to the same factor of lack of adaptation to the advance of mankind.

Yamadori are protected by law, as they can legally be killed only from the 1st of November to the last day of February. But the law can hardly be said to be enforced. Poaching is very widespread, and the police are almost helpless to cope with infringements of this law. One of the greatest defects of the Japanese game laws is the one which prohibits private preserves. The Emperor alone is allowed to possess estates on which public shooting is forbidden. Thus in the open season licensed gunners in great numbers wander over all the more accessible of the pheasants' haunts. The Copper Pheasants are driven down from the mountains by the snow in January and February, and thus many scores fall to the guns which otherwise would escape with safety at the higher elevations.

The same remarks apply to the killing of pheasants for millinery purposes, the Copper Pheasants suffering to a less extent only because of their fewer numbers and greater isolation. This, much more than killing for the market, is causing the thinning out of the birds. Many so-called Japanese sportsmen, I am told, are really pot-hunters, and with the use of the best make of guns and well-trained dogs, they reap a rich annual harvest. Such a hunter will shoot a cock pheasant, eat the flesh or sell it for twenty sen (ten cents. or fivepence), and sell the skin to a feather dealer for half a yen (twenty-five cents. or a shilling).

CAPTIVITY

The captivity records of *soemmerringi* and *scintillans* are so inextricably mixed that there is no use in attempting to separate them. It is a most mortifying commentary on the unscientific mental character of most pheasant fanciers that in all the published records and accounts of breeding not one describes the eggs, chicks, or the juvenile plumage, the courtship, the length of incubation, the moults or the voice either of adult or young. Every one of these important phases or habits of life could have been made with perfect accuracy and completion in any one successful breeding experience.

In 1864 Copper Pheasants were represented in the Zoological Gardens of London and Rotterdam, and in the Jardin d'Acclimatation in Paris. The following year the first egg was laid in the former Zoo, and before 1868 these birds had bred three different times in several European gardens.

Of late years there has been little success in breeding, and it is very evident that this species cannot be perpetuated after it has become extinct in a wild state. The wariness and nervousness of the cocks make any successful breeding in captivity a very fortunate occurrence.

DETAILED DESCRIPTION

Adult Male.—No two individuals are exactly alike, but the extreme form, especially common in the northern parts of Honda, shows white, or the effect of dilution with light pigment in every part of the plumage. The head is dull cinnamon; the neck, fore mantle and breast coppery bronze, with paler lateral fringe. The paler colour in the hue of yellow gold is sometimes characteristic of all the mantle and back, and represents the intermediate stage between the typical *soemmerringi* dark purple carmine and the pure white.

The white on the back and rump is of a very different order from the concentration of the same colour in *ijimae*. In the present form the central terminal part of the feather is always copper or gold; there is never an area of solid white colour, but always an impression of streaking, owing to the lateral limitation of the white. The basal chestnut, and usually the still more basal black, are more or less visible. The dorsal feathers almost always have a very narrow terminal margin of black.

The middle and greater wing-coverts are broadly margined with buffy white, separated from the pale vinous of the rest of the feather by a narrow line of black. The breast is visibly pale vinous, basally mostly black. The lower breast, sides, belly, and flanks are pale brown with long terminal fringe of creamy white, a character as strong as any in separating the extremes of *scintillans* from the more southern forms.

The tail shows a number of narrow black bands, each bounded anteriorly by an equally narrow one of buffy white, and posteriorly by a broader one of dark chestnut. The remaining very wide interspaces are pale rufous, much mottled with black. On the lateral tail-feathers the white cross-bar becomes much extended and black mottled on the inner web, and disappears altogether from the outer web. The tips of these feathers are black. The under tail-coverts are black with a narrow shaft-streak of chestnut. Fleshy parts as in *soemmerringi*.

The measurements on the whole diminish somewhat as we pass northward, but this is especially true as regards the tail. The average of twelve specimens from northern Honda, living on a high ridge far in the interior, in length of tail was only 660 mm., equal to the minimum measurement of *soemmerringi*. Instead of some fifteen cross-bars these birds had an average of only nine. The reduction in the central rectrices of these northern birds was thus confined only to actual length, not to the relative width of the interspaces and bars, which remain the same as in the other forms. In southern Honda *scintillans* grades insensibly into *soemmerringi*, and the same is true in central Kiusiu in regard to *ijimae*.

Adult Female.—These show considerable variation, but seem, even in the most northern birds, to have developed no constant node of differentiation from *soemmerringi*.

SYNONYMY

Phasianus (*Graphophasianus*) *scintillans* Gould, Ann. Mag. Nat. His. (3), XVII. 1866, p. 150; Seebohm, Birds of Japanese Empire, 1890, p. 371; Sharpe, Hand-list Birds, I. 1899, p. 38; Oates, Cat. Birds' Eggs Brit. Mus., I. 1901, p. 58; Tegetmeier, Pheasants, 1904, p. 203; Ogama, Annotat. Zool. Japon. 1908, p. 356; Buturlin, Ibis, 1908, p. 584.

Phasianus soemmerringi, var. *scintillans* Elliot, Mon. Phas., II. 1872, pl. XIII.; Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 337; Grant, Hand-book Game-birds, II. 1897, p. 36; Dresser, Manual Palaearctic Birds, pt. II. 1903, p. 667; Buturlin, Ibis, 1904, pp. 377, 412; Rothschild, Bull. Brit. Orn. Club, XIV. 1904, pp. 36, 37; Rothschild, Bull. Brit. Orn. Club, XXI. 1907, p. 24; Ingram, Ibis, 1908, p. 168.

Syrmaticus soemmerringii scintillans Beebe, Zoologica, I. no. 15, 1914, p. 283.

IJIMA'S COPPER PHEASANT

Syrmaticus soemmerringi ijimae (Dresser)

NAMES.—Specific: *ijimae*, named in honour of Prof. Ijima, Professor of Zoology in Tokyo University. English: Ijima's or Kiusiu Copper Pheasant; White-backed Satin Pheasant. Native: Koshijiro-yamadori (White-rumped Mountain Bird, Japanese).

BRIEF DESCRIPTION.—Male: Similar to *soemmerringi*, but with the lower back, rump, and a lateral line along the sides more or less pure white. This concentration of white leaves most of the remaining plumage dark chestnut with a metallic fringe. Female: Like the other forms, but more buffy in general tone and without bars on the central tail-feathers.

RANGE.—The southern part of Kiusiu Island, Japan, in the provinces of Osumi, Hyūga and Satsuma.

THE BIRD IN ITS HAUNTS

ONE day in early spring I leave my quaint little Japanese hotel and wend my way slowly through the narrow streets and lanes of Kagoshima. I pass the early opened markets, with their long strings of pitiful thousands of "heodoris"—the merest fluffs of feathers—for sale at two sen each. At the last house on the road, after I leave the city behind, from a rough bamboo cage comes the sweet, half-broken song of one of these birds—a beautiful medley of notes as of our wood thrush and robin combined. Steady walking soon brings me beyond the last house, and almost at once I begin to climb, first rolling slopes, then steeper, more precipitous ridges. Between are narrow valleys opening into beautiful vistas of distant terraced rice-fields. Now and then, as I cross a low-hanging terrace, a small flock of thrushes dashes up from the fields, or a wagtail runs swiftly over the newly turned sods. As I climb upward I begin to look down upon the flat-raked, clean-swept bottom lands, every inch made a part of the eternal rice-field checker board. Little terraces are scraped out and banked against even the steep slopes up which I am clambering. Finally I reach a place where a mere hand's-breadth of soil is lodged behind a cup-shaped boulder, and in this diminutive field three heads of rice are sprouting; typical of the minuteness, the thoroughness, of the whole nation.

The most beautiful spots beloved by the White-rumped Satin Pheasant are also the rarest. Usually they are preserved only because of the regard for some ancestral shade whose body lies buried near by. Here we find a carpet of ferns, bracken, and soft bamboo grass; then a mid-growth of graceful camellias—the tsubaki of the Japanese—whose myriad scarlet bell flowers sway in the wind, their clapper stamens muffled with knobs of yellow pollen. Pheasants will feed upon these petals when they fall to the ground. High above all rises the great evergreen expanse of camphor trees—in grace and size rivalling any grove of oaks. Their majestic trunks are thickly coated with moss on the northern side, and the green is picked out with the light-green rounded leaflets of an omnipresent clinging vine.

HOME OF IJIMA'S COPPER PHEASANT IN SOUTHERN JAPAN

The most beautiful spots beloved by Ijima's white-backed Copper Pheasant are carefully preserved because of regard for some ancestral shade whose body lies buried near by. Such a place has a carpet of ferns, bracken and soft bamboo grass, and a mid-growth of graceful camellias—the tsubaki of the Japanese—whose myriad scarlet bell flowers sway in the wind, their clapper stamens muffled with knobs of yellow pollen. High above all rises the great, evergreen expanse of camphor trees, in grace and size rivalling any grove of English oaks. A single leaf plucked from the mighty branches perfumes the whole glade with the aromatic camphor incense.

The upper photograph shows open Copper Pheasant country near the southern coast of Kiusiu, facing the great island volcano of Sakuragima. The lower photograph is a grove of camphor trees where several pairs of pheasants lived and roosted.

HOME OF IJIMA'S COPPER PHEASANT IN SOUTHERN JAPAN.

In such a place I have pitched my green umbrella tent, and making my way to it as quietly as possible, I part the cloth and creep within. I am glad to rest after the hard climb, and, lying still, I listen to the wind soughing through the trees. Now and then there comes a deeper bass—the needle music of a gigantic pine, which tops even the camphor trees down the slope. I have plucked a leaf from one of the huge trunks near me, and the whole air is perfumed with the aromatic camphor incense, seeming strangely tropical amid the early spring of this northern land. For through the trees I can see the drooping branches of willows laden with catkins, and the tang of spring is in the air.

Birds are not numerous, but all are vocal with twitterings and chirps—all save a single shrike, which perches for a moment on a distant twig. Active little white-eyes are the most numerous, creeping vireo-like among the mossy branches. Now and then a small flock of rosy finches whirls past with sharp metallic *tinks*. White-tailed finches rise from the newly ploughed fields far below, as a young Japanese boy passes with a load of radishes. The only song we hear is the double-phrased dyal-bird-like melody of the "heodori."

The cryptomerias show among the pines as patches of rich russet—due to their flowering tips. When a tit or other small bird alights on a branch, a perfect cloud of smoke-hued pollen floats off upon the air. Little danger of any flowers on these trees failing to be fertilized!

Behind my tent, and in a score of other places near by, I can see wild wisteria, climbing shrubs or vines, twining around the trunks and branches of pines and other trees. Their grasp is gentle, with none of the fierce, deadly compressing of tropical vines and lianas. In time these will reveal beauty in wonderful splendour. Now only tiny, brown, scaled buds hint of latent life within, but a few weeks hence the great pendant purple pompons of the wisteria will uncoil and fill the valleys with colour and odour. Some of the masses of bloom are said to be five feet long.

A pair of Japanese ravens croak hoarsely as a brown kite soars slowly past, and then suddenly the big black birds are silent and drop from their perch, winging swiftly along the steep mountain-side. There must be something disturbing the wild creatures farther along and still higher on the ridge. A flurry of small birds—tits and sparrows—drifts nervously past, and a faint, distant whirr of wings tells me that larger birds are a-flight. Fortunately my eyes are at a slit looking along the slope to the eastward, when there come into view two pheasants, a cock and hen, scaling toward me on bowed, motionless wings. They swerve when a few yards away, and with quick beats break their speed and settle, running out the impetus of their landing. Then they "freeze," and at that moment two more Copper Pheasants, hens this time, appear, and fly on past my tent and around a curving out-jutting terrace of rock.

Five minutes pass and the birds regain their composure. There is no hint of pursuit, and they peck here and there among the fallen camphor leaves. A yard nearer they come and find some source of food which holds their attention for ten minutes or more. The cock scratches vigorously, then backs away and flicks the turf with his beak. Now and then he utters a low crooning note, but does not share his spoils with his mate, who, several feet away, is equally busy, but silent.

Stepping out of the shade of the forest, the cock mounts a boulder, and makes a picture which will never fade from my mind. Behind him the soft greens and greys of the forest; above, the clear blue sky; in the distance, across the valley, the purpling ranges, and there, in the centre, the splendid bird glowing in the sunlight, reflecting now crimson, now gold from his plumage, and as he turns there flashes out, as strong to the eye as the gleam from a heliograph, the patch of pure white feathers upon his back. No protective colouring here—a glowing form of living copper and white. From my position the hen is very conspicuous, but when she steps down among the rocks and half-dead grass, she is easily lost, and when she has gone some distance down the slope I have to keep careful watch. As long as she moves, however, she is easy to detect.

If I found her difficult to follow, another pair of eyes did not, and the birds had reached a flat, rocky terrace, when there occurred one of the most spectacular incidents in all my pheasant watching. Without the least hint of warning, something hurled itself over the nearest summit of the ridge and hurtled past me with a whistling scream of pinions which startled me beyond control. I thrust out my head, upsetting camera and notebook, just in time to see a golden eagle strike the hen pheasant—or one of them, for the other two birds had appeared—and fall with it to the ground. The great wings of the bird of prey were widespread as it struck the earth, and such was its impetus that its head and beak were for a moment flattened among the low-growing plants. Recovering itself, it then freed one foot, and with wings half spread, hopped awkwardly to the rim of the ledge. Here it shook itself and searched the valley in all directions for many minutes before it took notice of the ruffled bundle of feathers which it clasped in its talons.

Quick as the onslaught had been, the pheasant must have leaped into the air, for my first view was of the moment of attack, when both birds were several feet above the ground. I had no eyes for the other birds, which escaped unheeded in the excitement. All nature seemed to realize that a tragedy had taken place, and for many minutes not a twitter or chirp reached my ear, not a living creature other than the eagle was in sight.

It seemed as if the eagle must have known the pheasants were somewhere on the hillside, and blindly hurled himself over the crest, trusting to his wonderful eyesight and instantaneous reaction of every muscle. It was the most marvellous exhibition of aerial control I have ever witnessed. Had the danger been less unexpected, the hens would probably have squatted and the cock would have paid the penalty, for that immaculate speculum would have been as certain of detection against the green as a flash-light. But theorize as I might I had witnessed a real wilderness tragedy.

Some slight movement on my part drew the attention of the eagle, and without effort he leaned forward, spread his pinions and floated off into the blue air, still holding the pheasant, and instantly dropped below my range of vision, never to enter it again.

GENERAL DISTRIBUTION

I found typical *ijimae* in the three most southern provinces of Kiusiu, Osumi, Hyuga and Satsuma. The birds are not abundant anywhere, but occur in fair numbers on the small mountainous island of Sakurajima, near Kagoshima. The centre of their distribution may be said to be the mountain of Kirishima.

GENERAL ACCOUNT

From my own observations and from information obtained from Japanese sportsmen, I gathered that the Kiusiu Copper Pheasant is extremely sedentary, and seldom wanders far from its home range. Indeed, the segregation of this white-rumped form in so small an area would seem to warrant such an assumption without further proof.

The birds live, as we have seen, in a very rugged, mountainous country, keeping well up on the steep hillsides most of the time, but descending into the valleys to the ricefields for food and water. During the season of the year when the rice is not available they remain on the upper ridges, showing that there is sufficient food for them in the more elevated forests. The vicinity of Kirishimayama is typical Ijima Pheasant country, and from every direction we can see this splendid double-peaked mountain. The summits are at present dead and bare, but well down on the southern slope, sheltered by a great rounded shoulder, is the present active crater. From the fringe of cryptomerias which surrounds this drifts a soft billowing blue smoke now upward, now curling gracefully around the great crags, dissolving so soon into invisibility that it looks like a small, isolated cloud.

In general habits Ijima's Pheasant differs to no appreciable extent from its more northern relation—*scintillans*. There is a less pronounced annual migration, as the weather is much milder even at the higher altitudes, and their food supply is probably never completely shut off by winter storms.

Owing to the large satsuma factories in this part of Japan there is a considerable number of well-to-do merchants, many of whom are sportsmen. Shortly before my visit one of these had shot sixty of these splendid birds in a comparatively limited area, all of which had been plucked and eaten. So this very local form seems doomed to early extinction, especially as there are no laws to prevent its being killed during the breeding season. In all Japan there is less than a score of preserved skins of this interesting pheasant: six specimens in two local schools in Kagoshima and nine or ten in the University of Tokyo.

DETAILED DESCRIPTION

ADULT MALE.—The fundamental pattern of almost the entire plumage is a dark, rich chestnut, with basal black extending up the vanes in the form of two elongated, anteriorly rounded, more or less visible spots. The chestnut thus occupies most of the terminal visible portion of the feather, and extends basally as narrow lines down each margin and down the shaft. The head is dominately chestnut with a vinous cast, but on the neck, mantle, back and breast a conspicuous metallic margin is developed, changing from vinous carmine to fiery gold.

On the wing-coverts, lower sides, posterior breast and remainder of the ventral plumage this gloss disappears, the vinous chestnut being dominant. On the wing-coverts and lower sides the basal black is quite conspicuous, showing distinctly even when the feathers are perfectly aligned.

The flight feathers resemble those of *soemmerringi*. The white markings are not alike on any two individuals, but the extreme may be described as follows: At the side of the posterior mantle, almost at the insertion of the wing, all the visible portion of the feathers is composed of a pure-white, loose-barbed fringe. At the same level on the back the metallic golden fringe becomes abruptly flecked with white, and almost at once merges into the two lateral zones of pure white. The entire lower back and rump are unmarked, glistening, silky white.

The upper tail-coverts are pale chestnut with a rather narrow terminal band of white. Tail as in typical *soemmerringi*, as are also the facial area and the colours of the soft parts.

Bill from nostril, 16 mm.: wing, 215 to 235; tail, 825 to 900; tarsus, 64; middle toe and claw, 61. Length of spur, 8 to 11 mm.

VARIATIONS OF ADULT MALES

No two birds are exactly alike, although even the greatest extremes show sufficient characters in common to be recognized as sub-specific.

Lower back and rump: The massed, more or less solid white of this portion of the plumage is the chief *ijimae* character, and it shows the greatest variation. From the extreme posterior rump, up along the sides to the very axillaries, the visible part of the feathers may be solid white, and along the mid-dorsal line I have seen an individual with traces of the white tinging the metallic copper up to the nape itself, covering a zone of over 200 mm. in length. This may be divided as follows, beginning at the rump and ending at the neck: pure white zone, 50 mm.; white dominant, 26; half and half, 75; copper dominant, 50.

The method of transition or of appearance of the white is of interest. On the scapulars and mantle one occasionally sees adventitious isolated round white dots. But on the back the first hints of white are always in the form of two lateral, subterminal, round spots, which soon coalesce along the shaft and gradually spread over the whole visible area, the basal chestnut and black being always present. Posteriorly, however, the black becomes dominant, and on the rump feathers of extremely marked individuals little remains of the chestnut but a narrow, irregular shaft-stripe. The transition from gold to white is usually clean and abrupt, very rarely by a fine mottling which gives a stained appearance of yellowish buff.

One bird which I obtained in Kagoshima had the white confined to the posterior 35 mm. of the rump, but it was very clear-cut, and the remainder of the plumage was very dark chestnut, setting it distinctly apart from *scintillans*.

Upper tail-coverts: The white edges vary from 2 to 6 mm. in width. These feathers, though quite short, always show a considerable amount of wear.

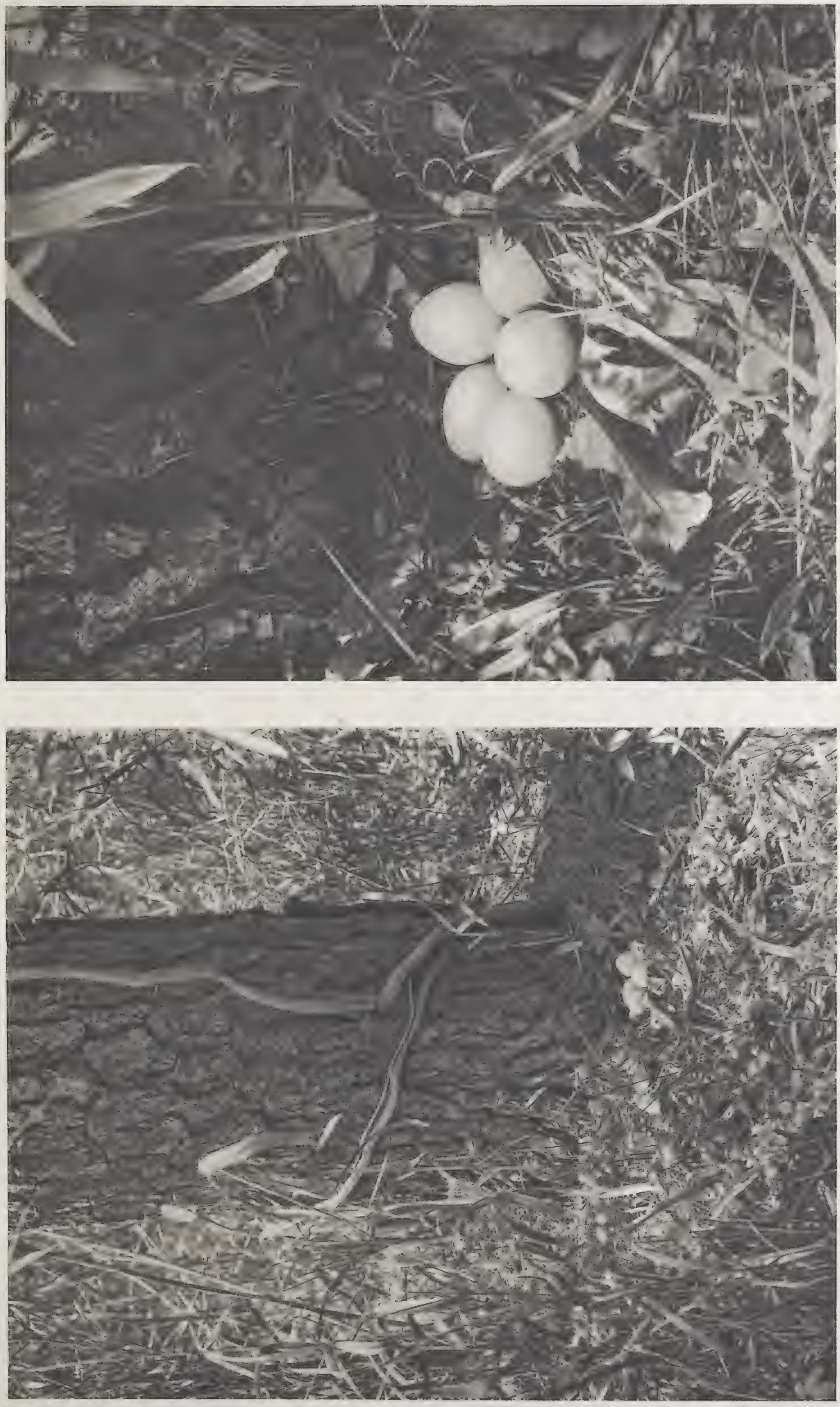
Central tail-feathers: The individuals with less white on the dorsal surface have central tail-feathers which approximate those of *soemmerringi*, while the more extremely marked *ijimae* have paler chestnut zones just anterior to the black cross-bars, never, however, as pale as in extreme *scintillans*.

Belly: Usually no white margins are present; occasionally there are pale or whitish margins to the lateral feathers, and very rarely on all the posterior ventral plumage.

Adult Female.—The only persistent characters I have observed are that *Ijimae* is in general more buffy, less white than in *scintillans*, with the various colours less

NEST AND EGGS OF IJIMA'S COPPER PHEASANT

THIS nest of five eggs was a late one, and possibly the second attempt of a hen whose earlier effort had come to naught through a marauding fox or raven. The nest was a mere depression near the base of a tall tree, and protected only by a few stalks of grass. The hen was not seen, although the eggs were warm when I first discovered them. She had slipped off and away while I was still at a distance.



NEST AND EGGS OF IJIMA'S COPPER PHEASANT.

distinct. The central tail-feathers show no grey barring in *Ijimae*, but only a homogenous mottling; the white tips of the lateral tail-feathers are broken with mottling; the visible ventral surface is of a more homogenous buffy colour.

Bill from nostril, 15 mm.; wing, 210; tail, 205; tarsus, 56; middle toe and claw, 53. Spurs are short and blunt, 2 mm. in length.

SYNONYMY

Phasianus ijimae Dresser, Ibis, 1902, p. 656; Ogama, Annotat. Zool. Japon., VI., 1908, p. 357; Buturlin, Ibis, 1908, p. 584.

Subsp. *Phasianus ijimae* Dresser, Manual Palaearctic Birds, pt. II., 1903, p. 668.

Phasianus soemmerringi ijimae Rothschild, Bull. Brit. Orn. Club, XIV., 1904, p. 37; Buturlin, Ibis, 1004, pp. 377, 413; Rothschild, Bull. Brit. Orn. Club, XXI., 1907, p. 24.

Syrmaticus soemmerringii ijimae Beebe, Zoologica, I., no. 15, 1914, p. 283.

HUME'S BARRED-BACKED PHEASANT

Syrmaticus humiae humiae (Hume)

Names.—Specific: *humiae*, for Mrs. Allan Hume, wife of the British ornithologist. English: Hume's Barred-backed Pheasant. Native: Loe-nin-koi (Manipuri); Yit (Burmese); Wuri (Kachin).

Brief Description.—Male: Crown brown; neck, upper mantle, chin and throat dark metallic steel blue; mantle fiery red; lower back and rump bluish-green with a narrow white fringe; wing as in Elliot; breast chestnut with blue gloss and fiery red margins; belly and sides chestnut; middle tail-feathers grey with narrow bars of mixed chestnut and black; lateral tail-feathers barred with black, the outer pairs mostly black with grey bases. Female: Resembles *ellioti*, except that the throat and fore-neck are usually devoid of black.

Range.—Manipur, the Lushai and the Chin Hills. To the east of Manipur, in Katha, it grades into *burmanicus*.

GENERAL DISTRIBUTION

Hume's Pheasant is very generally distributed in Manipur from the extreme north on the Naga Hills boundary, southward through the province, and on into the Lushai and the Chin Hills.

Two specimens from Katha, many miles to the east of Manipur, and about an equal distance from the Ruby Mines District of Burma proper, are both almost exactly intermediate in character between *humiae* and *burmanicus*.

GENERAL ACCOUNT

The first specimens of this pheasant to come into the hands of an ornithologist were two males—one living, the other dead—which Mr. Hume obtained under most interesting conditions. As in the case of the Mikado pheasant, the first hint that a new species was living in the country was given by the tail-feathers of a bird in the head-dress of a native. Mr. Hume's account is too interesting to abridge.

He was travelling in the country which lies between Bengal and Assam on the west, and Burma proper on the east, and was not expecting to find any new species of game-bird. He says:

"The day before I crossed the Jhiri River, which divides the British district of Cachar from His Highness the Maharajah of Manipur's territories, the Manipur Envoy, who was to accompany me in my peregrinations as guide, mentor, and commandant of my Manipur escort, came to meet me.

"In Manipur officials of rank who have deserved well of the State receive from the Maharaja's hands a plume of feathers, which they are henceforth entitled to wear, and which, in this simpler state of society, represents our stars and garters, our G.C.B.'s and grand crosses, etc. Not unnaturally the Envoy who boasted one of these coveted insignia drew my attention to his plume, of which he was evidently proud, and on my examining

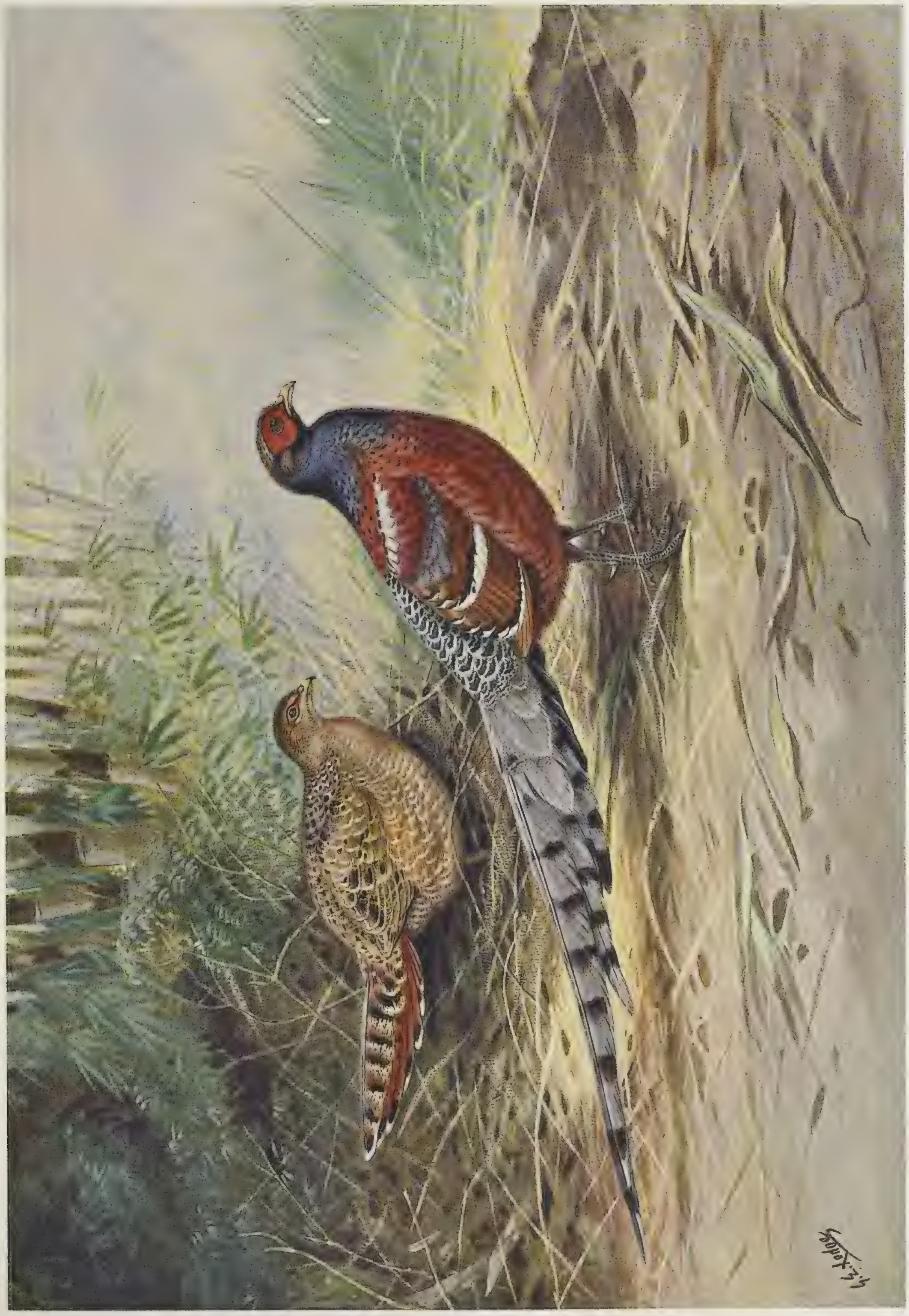
HUME'S BARRED-BACKED PHEASANT

Syrmaticus humiae humiae (Hume)

The first hint of the existence of this pheasant—as in the case of the Mikado—was the presence of its long, purple-grey tail-feathers in the head-dress of honour proudly worn by a native chief.

The first specimens were obtained by some natives going into enemy territory and setting traps at the risk of their lives. They are not rare, but live in dense forests in the neighbourhood of streams, and only the isolation of their haunts makes their habits so little known.

PLATE LXV.



HUME'S BARRED-BACKED PHEASANT.

it I immediately saw that it contained three or four long tail-feathers of a pheasant with which I was not acquainted. I at once inquired about the bird to which these feathers belonged, and was informed that it belonged to the Loe-nin-koi which occurred in the extreme south of the Manipur territory and in the eastern Looshai country. But the Envoy had never seen it, nor, so far as he knew, had any other Manipur ever seen it. It was an inhabitant of pathless hill jungles on the southern border, which had for long been subject to the ravages of the Kamhows, a fierce so-called Kuki tribe (they are not genuine Kukis), who invariably killed every one they came across. The tail-feathers, and these only, filtered into Manipur through the agency of certain semi-savages, originally residents of the Kamhow territory, but now refugees in Manipur, and though afraid to return, yet maintaining secretly some sort of intercourse with some of their former tribe-fellows.

"Day by day, as I marched, I persisted in my inquiries. One officer only, a Manipuri, who commanded a number of detachments scattered about the hills in the neighbourhood of Noong-zae-ban, or rather with that as a centre, in stockades, as a protection against Looshai raids, assured me that once in former years he had himself seen the Loe-nin-koi in the Jhiri Valley, a good deal south of where I crossed it and near the Looshai border.

"Arrived at Manipur, 'from the Minister down to the Clerk of the Crown,' I gave no one any peace about the Loe-nin-koi, but all to no purpose. No one had ever seen the bird; the Maharajah, who alone has the right to keep these tail-feathers, very kindly offered me a bunch of them, and he sent out stringent orders to all his officers in the south of the district to procure specimens of the bird, and really did all he could to get these; but all to no purpose.

"So time passed, and the Loe-nin-koi became daily more and more of a myth, the more so that after all ordinary methods of getting the bird had failed, it began to be suggested that 'there never was no such bird,' that perhaps the feathers grew on trees, or were brought from some far distant country. Still I stuck to it that the Loe-nin-koi I had to get, and I hope my good friends, the two Chief Ministers, have forgiven me for the way in which I worried them about this phœnix. The Maharajah himself, however, got interested, and when, after working the central part of Manipur, I started for the south, I was, through his kindness and that of Colonel Johnstone, the Political Agent, to whose support and friendship I was mainly indebted for whatever little success attended my explorations, armed with full powers to get at the Loe-nin-koi, if within the compass of the resources of the State.

"At the south of the Manchar Lake we got together the most important officers of the country farther south, and my Envoy made them understand that the bird had to be got. It was not distinctly said that every one would have their heads chopped off if we didn't get it, but a vague, gloomy cloud of awful possible eventualities was discreetly left to veil the vista.

"My Envoy and the officers had confabs off and on lasting a week; the exact localities nearest to us where the bird occurred were ascertained from old villagers, summoned from the more southern fortified villages, but the hitch was this—although just within the nominal boundaries of the State, and in a tract where in past time there were scattered Manipuri villages, of late years the Kamhows had so harried the country that it had been entirely deserted, and no Manipuri could get within ten miles of the nearest known haunt without the certainty of being murdered. On the other hand, if we were to go openly, we should want an army to secure our safety, should have to fight a number of regular battles, and probably set the whole southern frontier in a blaze.

"I replied that this might be all true (and I did not doubt it, as, when I went down to the junction of the Chakpee and the Imphal Turail, the main Manipur river, some thirty miles short of the nearest haunt, six hundred soldiers were turned out to make the trip safe), BUT—and there was a great deal in that but—the Loe-nin-koi had to be got.

"Then at last—necessity is often the mother of invention—seeing that escape was hopeless, a notable scheme was devised. A party of Kamhow refugees, living or wandering about near the border were sent for, and two of these I taught to skin. The plan was that all the adult males of the party, some sixty in number, should make their way to the nearest place where the Loe-nin-koi was known to occur, and while three or four trapped and two skinned, the rest, who knew all the ground well, should spread out in all directions and guard against a surprise. Set a thief to catch a thief; being Kamhows themselves, they knew what to expect and how to guard against it, and they knew, moreover, every inch of the ground. Any one else was certain to be killed, but in their case there was, as they arranged the expedition, little danger. Of course they were clamorous for some of the Enfield rifles of my guard, but as I well knew that then instead of trying to get pheasants they would have gone head-hunting among their former acquaintances on their own account, and probably have thus led into a serious counter-raid into Manipur, I positively refused to give them any arms. They were to run, not fight, and with all their scouts out, and knowing the ground far better than the Kamhows on the other side of what I may call the Debateable Land, there was no chance of them getting into serious trouble. Now, these creatures were the most absolute savages; they never had, I believe, though my Envoy thought otherwise, the slightest intention of bringing the pheasants; all they were manœuvring for was to get a pretext for raiding into their old country, and to procure arms so as to enable them to pay out old scores. So, naturally, when they found that they were to have no chance of doing business on their own account they decamped during the night. Then we sent some of the Moirang people, who had a certain acquaintance with them, to warn them that they must either come back and arrange definitely to get those pheasants, or they should be driven out of Manipur territory, when, as they well knew, their quondam compatriots would have speedily accounted for them.

"Thereupon they all returned, remarking blandly that they had only run back to their camp in order to fetch food for the trip. They seemed in such perfect good humour that we were a little too kind to them, whereon they at once began to say that without arms they would certainly not go, and to assume a distinctly insolent manner, though a few hours previously they had crept into the village in mortal terror. Then my Manipur mentor, one of the sweetest-tempered and most patient old gentlemen I ever met with, blazed out in wrath, for the first and last time during the six months we were together (and even then, as I found out, it was only a piece of excellent acting). In a minute two of the leaders were seized, eight men of the guard loaded their rifles, and it seemed as if there was going to be an execution then and there. All the rest of the men began to howl and throw themselves at my feet, but of course I shrugged my shoulders. I could not understand what was passing, but I knew well that my old friend would not hurt a fly, and was quite content to let him play his own game. I found out later that what he had said when he pretended to be so furious was this: 'You scoundrels, how many Manipuris have you not killed in old times, when you came as fugitives, and we ought to have killed you? I it was who was Governor down here, who induced the Maharajah to spare your lives; now the first time His Highness desires a small service of you, you treat his sacred orders with insolence, you, you dogs! You shall die! Here, seize those two and shoot them to begin with!'

"All began to cry and howl and throw themselves on the ground, but the old gentleman was not to be appeased, and I really became nervous, for eight men with loaded Enfields (which they did not in the least know how to use, but which they were brandishing in the most terrifying manner) were dangerous.

"Guessing that he wanted a stepping-stone down from his high horse, I then came forward and suggested that, if they once went off for the pheasants and brought some within a week, their lives might be spared. He appeared to receive the suggestion with great deference, but most unwillingly, and walked backwards and forwards saying in their language, as I afterwards learnt: 'No, they shall die; they are only fit to be shot, dogs; still, his Excellency is His Highness's guest; it is as though the Maharajah himself spoke, but they ought to be shot. Well, never mind, I will shoot them the next time they give the smallest trouble.' Then he turned to them and said that at my request he would spare them if they went off then and there and brought the pheasants.

"Instantly they agreed to go; there was no more hesitation, and in half an hour they were off, laughing and chuckling and vociferously chaffing the two who had been seized for execution, and who, although they fully believed that they had been within an ace of death, equally treated the matter as a most amusing adventure. Indeed, they went off in such high spirits that I suspected that they had seen through the joke, and that we should see no more of them, but the Envoy told me not to fear. He said: 'These are not men, they are mere animals; unless you frighten them you can get nothing done; they always meant to go; all this has been done in the hopes of getting something more out of us; they are in high delight now, because they can easily get the pheasants without any real danger, and though they have failed to extort more, what you promised them at first is to them what a crore would be to you; they never saw so much money in their whole lives!'

"Sure enough, within the week they returned with one beautiful fresh skin and one perfectly uninjured bird in a cage, both unfortunately males. According to their account, the first day they began trapping they were scented, their scouts driven in, and they had to fly. This was probably true, because, as they were to be paid a large sum per bird, once they were on the ground they would assuredly not have contented themselves with securing only two. Being therefore probably true, it was out of the question to think of sending them back again, and for the nonce I had to be satisfied with the two birds.

"When I exhibited the skin at the capital the Maharajah was delighted. Neither he nor any one there had ever seen the bird, and he has kindly promised to procure me more, and especially to get me females. Now that I have shown that the bird does exist, and can be got, His Highness is pretty sure to insist on a good supply henceforth.

"The live bird, though a full-grown cock, became perfectly tame in a few days, and a great favourite in the camp. It would eat bread, boiled rice, winged white ants, moths, taking them gingerly out of our hands. At last I thought I really had a prize for the Zoo, something worth sending. Alas, the last day I was in the Eastern Hills, about the middle of the night, the huts in which my servants were, and in which was also my poor pheasant, suddenly caught fire. How, we do not know, but made of dry palm and cane leaves, they were like tinder, and went off almost like gunpowder. The men tumbled out somehow, without shoes, clothes and bedding, and all more or less singed; but everything was destroyed, and amongst the rest our poor pet. It was under a heavy wooden trestle, which was only slightly charred, and the bird itself was not burnt, but had only had its feathers somewhat singed, and had apparently died from suffocation.

"According to the accounts of my savages, these birds live in dense hill forests at elevations of from 2,500 feet (the height of the lower end of the Manipur plain, or, as it is miscalled, valley) to fully 5,000 feet. They prefer the neighbourhood of streams, and are neither rare nor shy. They extend right through the Kamhow territory into Eastern Looshai and North-west Independent Burma.

"That they occasionally stray up the Jhiri Valley well into Manipur is probable, and they may occur not only where we procured them in the extreme south of that State, but also probably in the southern portion of its Eastern Hills."

With the exception of this account, which was written over thirty years ago, the literature of ornithology offers little in regard to the life history of this pheasant. I was unable to visit its haunts, and therefore did not see the bird in life.

Baker records that Hopwood and Mackenzie, when touring in the North Chin Hills, had a clutch of eight eggs brought in to them in the end of April 1914 by the Chins, said to be those of Hume's Pheasant; unfortunately they were on the verge of hatching, and it was only possible to save four eggs out of the clutch. The eggs were not such as had been expected, so that it was with the greatest delight the same two collectors had the good luck themselves to take a second nest and see the parent bird within a few days of receiving the first. This nest, which was found on the 1st of May, contained only seven eggs.

In the following year, near the same spot and on the same date, Mr. Mackenzie obtained another nest with ten eggs, while on the 20th of April and the 1st of May two other clutches were brought to him by Chins containing respectively six and seven eggs. In neither of these two instances were the parent birds trapped, though the Chins produced some feathers to support their story; the eggs are, however, exactly similar to those taken personally by Mr. Mackenzie, and there does not seem to be any reason to doubt their authenticity.

"All these eggs were taken from a ridge above and to the west of Haingyan, near Hankin, at an elevation of some seven thousand feet.

"The eggs are certainly not in the least like what I should have expected, being far more like small, fragile eggs of the junglefowl than those of the true pheasants. At the same time, even if Mr. Mackenzie had not, as he informs me in a letter, on the one occasion seen the bird leave the nest, it would have been difficult to attribute them to any other bird than Hume's Pheasant. The junglefowl does not breed at seven thousand feet in this part of Burma, and the eggs are much too small for any of the forms of silver or kalij pheasants which are to be found in the Chin Hills; and, moreover, though superficially just like junglefowl eggs, those I have seen are more finely grained, with a closer texture, slightly glossed, and with much thinner shells in proportion to their size.

"Eggs very similar to those in my collection are four eggs laid by *P. elegans* in the Zoological Society's Gardens at Regent's Park, and which are now in the Natural History Museum. Both *P. scintillans* and *ellioti* also lay cream or stone-coloured eggs, so that there is really nothing extraordinary in the Hume's bird doing the same.

"In shape they are broad ovals, but a little compressed towards the smaller end, and do not appear to vary much. In length the thirty eggs of which I have measurements vary between 45·2 and 52·8 mm., and in breadth between 33·2 and 37·6 mm., the average being 47·7 and 35·3 mm. These pheasants appear to be early breeders, for both the clutches obtained in the end of April were so hard set that they must have been laid in March, and though it is hardly safe to generalize on such scanty material, the 15th of March to the 15th of May is probably the limit of their breeding season."

A letter from Mr. Cook to Baker completes about all that we know of this interesting pheasant: Hume's Pheasant "I often saw and shot. The birds were generally to be found in somewhat open jungle, where the trees are principally oaks and similar species, and where one finds undergrowth and open spaces of long grass, or long grass and bracken mixed. Near Minkin I found them in steep grass slopes, and here they were by no means uncommon, and associated in small flocks or family parties. On one occasion I flushed no less than eight or ten birds from an anthill overgrown with grass and crowned with a clump of dwarf dates, upon the fruit of which I think the pheasants were feeding. As far as my experience goes, they do not fly very far when first flushed, and as a rule they fly low down, seldom, if ever, rising above the tops of the trees; nor does their flight strike one as being at all fast, and compared with the English pheasant it seems very much slower. They are not hard birds to flush, especially the first time, but as I have always had a dog out with me when after these birds I cannot speak with much authority on this point. When alighting after the first flight they often run considerable distances, but one may put a bird up time after time from almost the exact spot at which he drops.

"They are such beautiful birds that their very beauty has sometimes saved their lives when I have really wanted them badly: their skins as specimens and their flesh for the pot. To see half a dozen cock birds rise almost at one's feet and then scatter in all directions, the wonderful blue and white feathers of their rumps showing up like flags against the rest of the brilliant plumage, is a most extraordinary sight, and I have found the blaze of colour so gorgeous and attractive that I have sometimes been arrested in the very act of raising my gun to fire, and have instead stood to watch them and enjoy the sight.

"I think wherever I have found this bird there have been outcrops of rock here and there in the grass they frequent. In some cases these outcrops are scattered and few, but, again, very thick and plentiful, so that the patches of grass form little roads in between them. The only sound I have heard them make, and which I can with certainty attribute to them, is a low, grunting call, exactly the same as that made by the Burmese pheasant, a bird I knew well in the south-east of these hills."

DETAILED DESCRIPTION

ADULT MALE.—Crown olive brown, the edges slightly glossed with green, chin and upper throat black; neck, upper breast and upper back jet black, with broad, steel-blue edges, the black concealed except where the feathers are disturbed. In fully adult birds the blue is irregularly continued down as far as the rump in even diluted amount; interscapulars and back broadly edged with glowing copper; lower back and rump steel blue, paler than that of the upper back, each feather with white edges and a white bar; upper tail-coverts grey, slightly vermiculated with white and with an obscure, broken central bar; tail similar, with bars of black, mottled with chestnut on the central rectrices, and a wide, sub-terminal bar on the four outer pairs, increasing in width toward the outermost. Several of the outer rectrices are mottled white at the tip. Medium wing-coverts like the back, with a broad, steel-blue bar, lesser coverts similar, with a broad band of white bordering the blue; greater coverts chestnut, with broad white tips and a bluish subterminal band; primaries brown, edged with chestnut, secondaries wholly chestnut on the exposed outer webs, tertiaries like greater coverts; lower breast similar to the upper back, changing gradually into deep chestnut on the abdomen and flanks; thighs and centre of abdomen mottled brown, under tail-coverts black, slightly glossed with bluish.

Facial skin scarlet; iris, orange; mandibles, greenish horn, lighter toward the tip; legs and feet brownish. Length 900; bill, from nostril, 20; wing, 217; tail, 530; tarsus, 63, middle toe and claw, 52 mm.

ADULT FEMALE.—Crown reddish brown, the middle feathers with small black centres, the sides of the crown, lores and chin feathers mottled with darker; neck above and on the side sandy brown, faintly barred with blackish; upper back and scapulars similar, with wide, jet-black edges and bars, and a white, arrow-shaped shaft mark on each feather; lower back, rump and upper tail-coverts mottled sandy brown, with irregular black centres and white markings, especially on the posterior plumage. Central rectrices sandy brown, with faint, irregular, mottled, dark-brown bars; outer rectrices chestnut, with black bars and broad white tips; the breast is pale sandy brown, with a mottling of black spots; lower breast and flanks more rufous, barred with pale grey; under tail-coverts mottled sandy and brown, the longest feathers chestnut, like the outer rectrices, with white tips and black bars; wing feathers and coverts mottled grey on the visible portions, varying to sandy with well-defined black marks, and faint, narrow, whitish edges to the medium and greater coverts; primaries mottled brown, with pale sandy bars on the outer webs.

Facial skin scarlet; iris pale yellowish; mandibles dull horny, paler toward tips; legs and feet brownish grey. Length 600; culmen from nostril, 18; wing, 210; tail, 250; tarsus, 60; middle toe and claw, 48 mm.

COMPARISON OF ADULT MALES, *HUMIAE* AND *BURMANICUS*

The adult male, *humiae*, resembles *burmanicus*, except that the white fringe of the lower back and rump is much narrower, measuring 2 to 2·5 mm., compared with about 5 mm. in the eastern bird. This character is constant in specimens from the general ranges of the two forms. In Burmese birds we almost invariably find a very decided increase of chestnut, both on the wing-bars and tail-feathers. There are no other characters which are at all constant in a large series of individuals.

An adult male in full plumage shows the following characters, as compared with *burmanicus*. The white scapular band is much reduced, while the alar band (*b*) of chestnut is almost absent. In fact, the whole anterior portion of the wing is rather faded metallic blue. Band (*d*) is also reduced about half, and the white tips to the coverts and secondaries are wider. The measurements in millimetres are as follows:

	(*a*) white	5
(On wing proper).	(*b*) chestnut	10
	(*c*) faded blue	38
	(*d*) chestnut	20
	(*e*) white	13
	(*f*) chestnut	43
	(*g*) black and white	18

The blue of the wing, and to a less extent that of the neck, is a grey steel blue, not the dark steel blue of *burmanicus*.

On the back and rump the white fringe is only 2 mm., as compared with 5 mm. in *burmanicus*, and adjoining this is a distinct band of steel blue, with a lesser gloss over all the large, dark, semicircular area. The two white bars are more basal, and do not show when the feathers are in order.

On the breast the steel-blue fringes persist well down on the central line of the belly. The tail is of a purer, darker grey, not nearly so mottled and light as in *burmanicus*. Two male birds collected in central Katha, but in different localities, show a decided difference in characters, but the average of both is almost exactly intermediate between *humiae* and *burmanicus*. Thus we unquestionably find the two forms intergrading in the northern part of their distribution, a trans-Burmese bridge existing between Manipur, Katha, and the Ruby Mines District. In the southern parts of their ranges the birds apparently do not approach closely, neither form passing over the low, flat plains of the Irrawaddy.

Male of the Year.—This bird shows no signs of moult and is almost identical with the adult. The wing-bar formula is more like *burmanicus*, and the neck-gloss is more of the faded blue than steel blue. The back and rump is typical *humiae*, but the gloss is green rather than blue. The black cross-bars on the tail show a well-marked bar of chestnut on both sides of the black. Chin and throat are brown, without gloss.

Male with much Juvenile Plumage.—The white of the side crown has very short metallic tips and is very distinct as a broad band from the eye backward, bordering the bare face. The steel-blue gloss extends far down on the mantle, the copper and rufous area of the back being reduced. The wing is in full moult, and the abundance of old feathers breaks up the series of wing-bars.

The juvenile lesser coverts are dull mottled rufous and black, the median ones with white tips. These median coverts are chiefly a mottled rufous with two conspicuous, lateral, sub-terminal black ocelli, which become a bar on the inner secondaries.

The forerunners of the white, greater covert bar are mottled grey, buff and dark brown, whitening toward the tip. The secondaries are black, with deep triangular teeth or broken barring of mottled rufous on the outer web. The primaries are heavily barred on the outer web with buffy rufous.

The juvenile mid-back feathers are mottled chestnut with an irregular, black, central shaft-spot. On the rump the feathers are a coarsely mottled grey, and the black area has enlarged.

On the ventral surface, the pectoral steel blue extends far down on the sides and lower breast, dying out as central ocelli, like those which are so characteristic of the anterior steel-blue neck plumage. The mid-line of the belly is much mottled with black.

There is little or no chestnut on the rectrices. Beak from nostril, 16; wing, 210; tail (full-grown juvenile), 223; tarsus, 63; middle toe and claw, 50; spur, 5 mm.

SYNONYMY

Gallophasis humiae Hume, Stray Feathers, IX. 1880, p. 461 [So. Manipur]; Hume, Ibis, 1881, p. 608; Godwin-Austen, Proc. Zool. Soc. 1882, p. 715 [N.E. Manipur]; Hume, Stray Feathers, XI. 1888, p. 302; Grant, Hand-book Game-birds, II. 1897, p. 42; Oates, Ibis, 1898, pp. 124, 125; Finn, Ibis, 1898, pp. 311, 312; Sharpe, Hand-list Birds, I. 1899, p. 38.

Phasianus humiae Grant, Cat. Game-birds Brit. Mus., XXII. 1893, p. 335; Finn, Ibis, 1898, p. 311; Blanford, Fauna Brit. India, Birds, IV. 1898, p. 80 [partim]; Finn, Jour. Asiatic Soc. Bengal, LXIX. 1900, p. 144 [Chin Hills, Burma]; Bingham, Jour. Asiatic Soc. Bengal, LXIX. 1900, p. 137; Rothschild, Bull. Brit. Orn. Club, XXI. 1907, pp. 23, 24; Finn, Game-birds India and Asia, 1911, p. 54 [partim].

Syrmaticus humiae Beebe, Zoologica, I. No. 15, 1914, p. 283.

Phasianus humiae humiae Baker, Jour. Bombay Nat. Hist. Soc., XXV. 1918, p. 348.

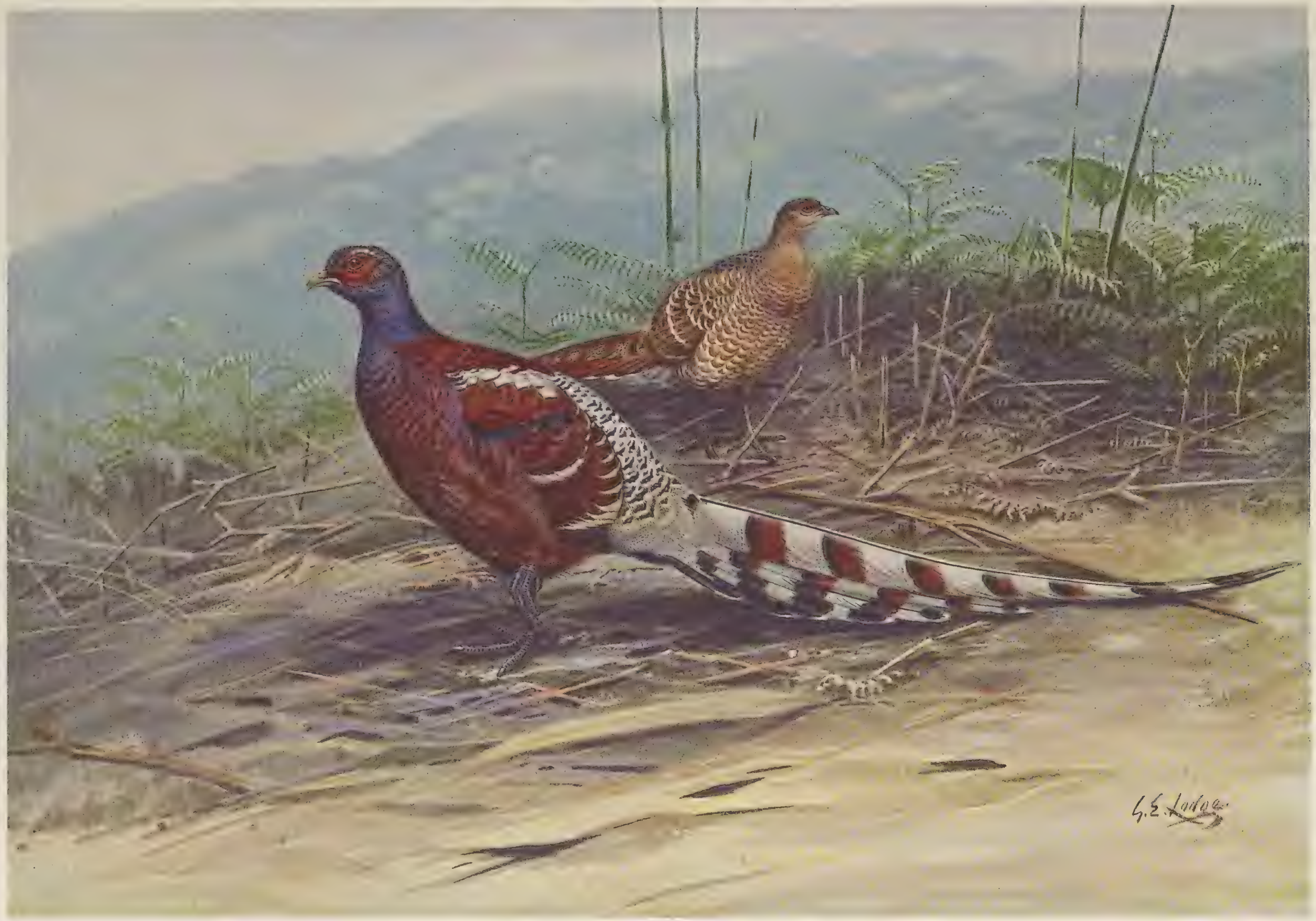
BURMESE BARRED-BACKED PHEASANT

Syrmaticus humiae burmanicus (Oates)

It is seldom that these pheasants make their way down to the low plains, but even in their mountain home few specimens are trapped, as they have the habit of flying over the deadly bamboo fence of the natives, instead of attempting to walk through the dead-fall guarded openings.

I found them feeding on seeds and berries, and associated in pairs. They are shy, and a fleeting glimpse of a blue-headed, wine-coloured bird, splashed with white, was the usual result of a long and patient stalk.

PLATE LXVI.



BURMESE BARRED-BACKED PHEASANT.

BURMESE BARRED-BACKED PHEASANT

Syrmaticus humiae burmanicus (Oates)

NAMES.—Specific : *burmanicus*, after its native country, Burma. English : Burmese Barred-backed Pheasant. Native : Tit (Burmese), Wuri (Kachin).

BRIEF DESCRIPTION.—Male : Similar to Hume's pheasant, but with the white fringe on the lower back and rump twice as wide (5 mm.) ; much more chestnut on the wing-bars and the tail-feathers, and the steel blue of the Manipur bird rather blue green. Female : Indistinguishable from the female of *humiae*.

RANGE.—Burma, east of the Irrawaddy, from Ruby Mines to the Southern Shan States. Yunnan.

GENERAL DISTRIBUTION

IN Burma proper this pheasant has been recorded from Ruby Mines on the north, south through Mandalay and both the Northern and Southern Shan States. I found it both in Myitkyina and in the adjacent part of Yunnan. It grades into *humiae* westward through Katha and the Upper Chindwin.

GENERAL ACCOUNT

Our ignorance of this bird in its wild home, of its life history and of its food and breeding is almost complete. The few white men who have seen it have been sportsmen whose only interest was to get it dead in their hands as soon as possible.

My first view of the Burmese Pheasant was on the eastern boundary of Myitkyina in northern Burma.

I was one day waiting for some kaleege pheasants to put in an appearance at their regular drinking-place, and was, as usual, the subject of abuse by a pair of squirrels and a mob of laughing thrushes, when a new voice was added to the general hubbub. I thought at first it was another species of squirrel—a series of rapidly uttered harsh chucks—very evidently of alarm and suspicion. It came from a low tree near by, and I soon discovered the author, for in a few minutes a sudden beating of wings brought a long-tailed pheasant into full view. It alighted on a low stump, gave one glance in my direction, uttered a single loud *chack !* and dashed off through leaves and twigs.

I neither saw nor heard this species alive again near this place, but during a later trip farther east in western Yunnan I found a male Burmese Pheasant, much decomposed, lying in a small pool of water in the jungle. It had two wounds in the back which might have been inflicted by a large hawk, although the dense underbush would point rather to one of the four-footed beasts of prey. Whatever the cause of death, the victim had escaped being devoured, and was now in the process of dissolution by the combined agents of warmth, water and a myriad ants. This individual had a great deal of chestnut even for its subspecific form, the other characters being those of typical *burmanicus*.

These pheasants require considerable elevation, and seldom wander downward to anywhere near the level of the plains. They delight in hillsides, and, like so many of their family, prefer to trust to legs rather than wings for escape. At about four thousand feet I found them in a diversified country, with pines rather abundant, alternating with scrub bamboo, or at lower elevations with this latter type of vegetation growing to a height of ten and twelve feet. In one locality I heard their rather harsh crow regularly morning and evening, but the thick underbush with its carpet of dry leaves proved an impassable barrier to close approach. Even when I could locate the pheasants within reasonably narrow limits, and flank them by sending around one or two natives on the farther side, I would catch only a fleeting glimpse of the birds as they dashed by.

The natives do not catch them in their long lines of dead-falls as frequently as other pheasants, and say that it is because when their suspicions are aroused, instead of dashing through the nearest opening, they frequently fly up to the lower branches of a tree, and when their fear has passed and they descend, their flight is downhill, and hence over instead of through the deadly bamboo fence.

I found the birds feeding on seeds and berries, with only slight traces of animal diet, chiefly earthworms, the tiny red type which is so abundant in many parts of Burma. In country which was rather heavily forested the Burmese Pheasants seem to feed on and off throughout the day, but on more open slopes they come out only in early morning and near sundown. The birds were in pairs, or the males alone. I saw no trios, nor indeed any hint of polygamy, though this is merely negative evidence. The complexity of the wing-barring and other plumage characters are hardly noticeable in the wild birds, the general effect being of a blue-headed, wine-coloured bird marked with irregular white patches. The flight seems less rapid and more deliberate than that of most pheasants, the bird choosing its way as its descends the hillside, and not hurling itself heedlessly from summit to valley.

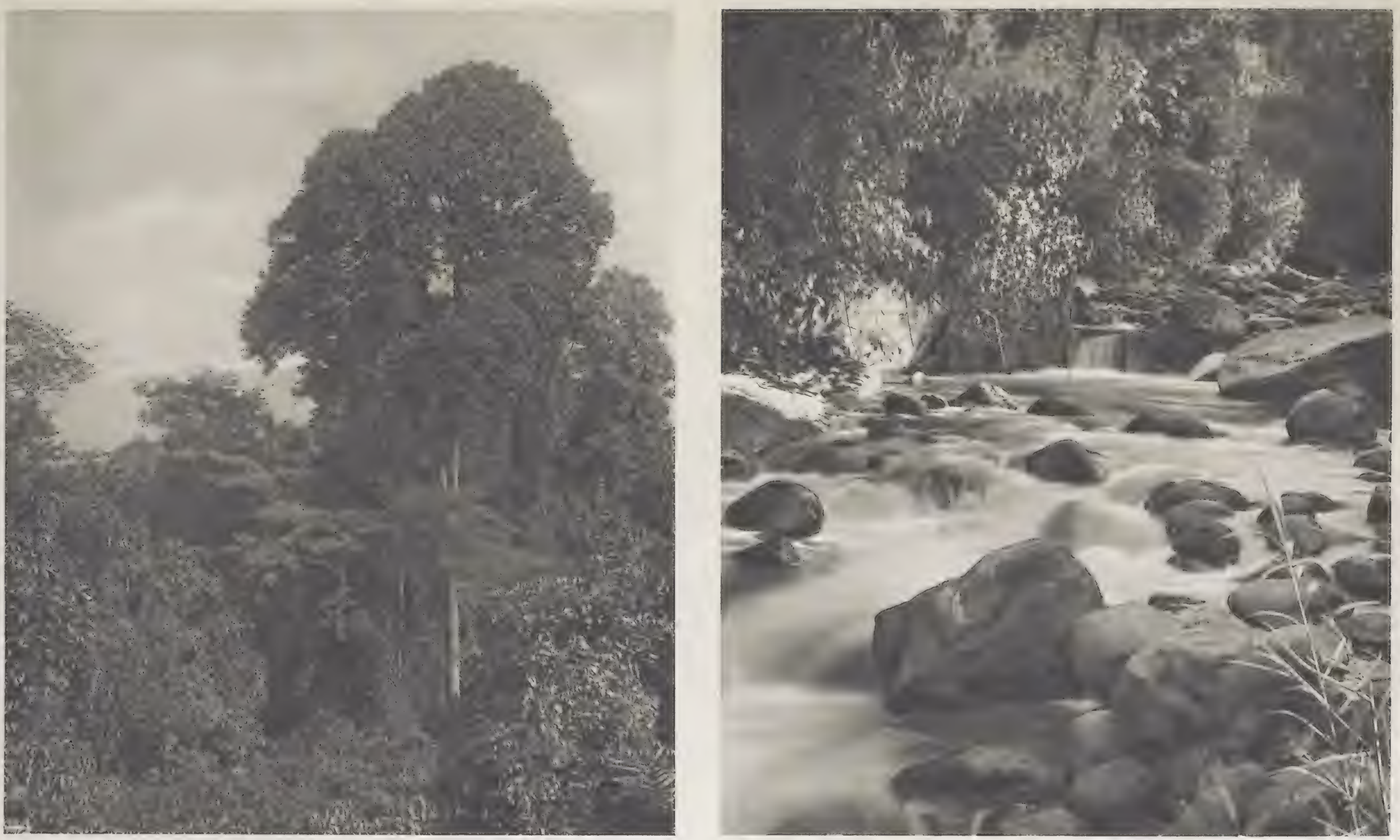
The details of the daily life of these pheasants are hardly to be learned by a heavy-footed human being without many months of patient watching. One cannot stalk them in dry-leaved country, but must resort to umbrella tents or tree platforms, and the difficulty with these methods is the uncertainty of the movements of these birds. They are very unlike the kaleege in the methodicalness of their daily excursions, and while six or eight pairs may pass over a ridge for a day or two on the way to water, for the following week, without any apparent cause, not a bird will appear anywhere in the vicinity. Thus luck enters as a considerable factor into the study of their life-histories.

J. P. Cook writes as follows of the Burmese Pheasant: "I saw this beautiful bird . . . several times, and generally in the open jungle on rocky hills. On one occasion I put up five birds singly at intervals of about a minute or two. At one time I thought I had found a nest, as a hen bird rose at my feet, but I hunted everywhere without success. These pheasants do not seem to be quite so gregarious as *G. lineatus*, nor so partial to the proximity of water. . . . On one occasion I put up a pheasant out of some wild raspberry bushes among long grass, on the fruit of which it was perhaps feeding."

HOME OF THE BURMESE BARRED-BACKED PHEASANT

My first view of this bird came when I was waiting for some silver kaleege pheasants to appear at their usual drinking place on the banks of a rushing stream. I was rather hopeless of any result, for I had been discovered and was being abused by a pair of squirrels and a mob of laughing thrushes, when a new voice was added to the general hubbub—a series of rapidly uttered chucks of alarm and suspicion from a low tree. A moment later, with a loud beating of wings, a Burmese Barred-back swung into view. It alighted on a stump, gave one glance in my direction, uttered a single loud *chack!* and dashed off at full speed.

The home of these birds consists principally of dense mountain-side forests, cut by tumbling brooks and streams.



HOME OF THE BURMESE BAR-TAILED PHEASANT

DETAILED DESCRIPTION

Adult Male.—Forehead, crown and nape dusky brown, with much concealed basal white. Chin also dusky brown, showing posteriorly more and more steel-blue margins, until this colour predominates on the throat, the neck all around, upper mantle and breast. Mantle rufous with a broad, disintegrated fringe of fiery red, and a small rounded spot at the extremity of the shaft. The back is black with a long white fringe 5 mm. in width, and two narrow cross-bars of the same colour, the black between the distal cross-bar and the fringe being glossed with blue. The rump-feathers show a general degeneration of the pattern, the feathers being more or less mottled black and white, and in some birds the white fringe becomes a golden yellow buff with considerable sheen. This is interesting as approximating the rump coloration of the firebacks and copper pheasants.

The wing shows the same general scheme of colouring and pattern as in *ellioti*, namely, successive bands of colour, beginning at the antero-interior or shoulder edge of the wing as follows:

		Average width.
(*a*)	White band with slight blue outer border	15 mm.
(*b*)	Broad band of chestnut with metallic-red fringe	28
(*c*)	Band of steel blue	15
(*d*)	Very broad band of chestnut with very narrow fringe	38
(*e*)	White band, with partly concealed black inner border	15
(*f*, *g*)	Wide chestnut band formed by the secondaries, followed by the successive black and white bars of the tips of these feathers	28·8

The coverts and rectrices are much as in *ellioti*, save that the grey interspaces are very wide, and the narrow cross-bars are black with more or less chestnut along the distal border of the black.

The coverts are much mottled, and on the lateral feathers the black increases and the chestnut gradually disappears.

The lower breast shows considerable fiery fringe and black spots, as on the mantle, but after a few rows of feathers these characters disappear, and the remainder of the ventral surface and sides is wholly dark rich chestnut. On the flanks and thighs considerable black marking appears, and the under tail-coverts are wholly black with a slight greenish gloss.

Iris hazel brown; facial skin scarlet; legs and feet grey or dull yellowish horn colour. Beak from nostril, 18 mm.; wing, 230; tail, 610; tarsus, 66; middle toe and claw, 54. Spur curved and usually slender, 18 mm.

Adult Female.—The dorsal plumage is in no way distinguishable from that of *ellioti*.

On the ventral surface the only distinguishing character (except in the rare individuals of Elliot females which almost lack the throat patch) is the very great reduction of black, although in no case is it altogether absent. Still this character on the whole is a diagnostic one, as the black never forms a solid mass, but at most conspicuous bands and shaft-stripes on the lower throat, with a sprinkling of isolated round spots on either the outer or inner webs of scattered breast-feathers. The more usual occurrence is as narrow shaft-streaks on the lower neck, while the lower breast and belly are creamy white with one or two wide diffused cross-bars of pale buff.

Beak from nostril, 17 mm.; wing, 210; tail, 190; tarsus, 58; middle toe and claw, 48.

SYNONYMY

Calophasis burmanicus Oates, Ibis, 1898, pp. 124, 125 [Ruby Mines and Southern Shan States, Burma]; Finn, Ibis, 1898, p. 312; Sharpe, Hand-list Birds, I. 1899, p. 38.

Phasianus humiae Sclater, Ibis, 1891, p. 152; Oates, Jour. Bomb. Nat. His. Soc., X. 1895, p. 112; Rippon, Ibis, 1897, p. 5 [Kalaw, Southern Shan States]; Finn, Jour. Asiatic Soc. Bengal, LXVI. 1897, p. 524; Blanford, Fauna Brit. India, Birds, IV. 1898, p. 80 [partim], p. 486; Wood and Finn, Jour. Asiatic Soc. Bengal, LXXI. 1902 p. 129 [Kampetlet, Upper Burma]; Finn, Game-birds India and Asia, 1911, p. 54 [partim].

Phasianus burmanicus Rippon, Ibis, 1901, pp. 527, 556 [Kalaw, Fort Stedman and Loi Maw, Southern Shan States]; Harington, Jour. Bomb. Nat. His. Soc., XX. 1910, p. 1010 [Maymyo].

Phasianus humiae burmanicus Rothschild, Bull. Brit. Orn. Club, XXI. 1907, pp. 23, 24.

Syrmaticus burmanicus Beebe, Zoologica, I. No. 15, 1914, p. 283.

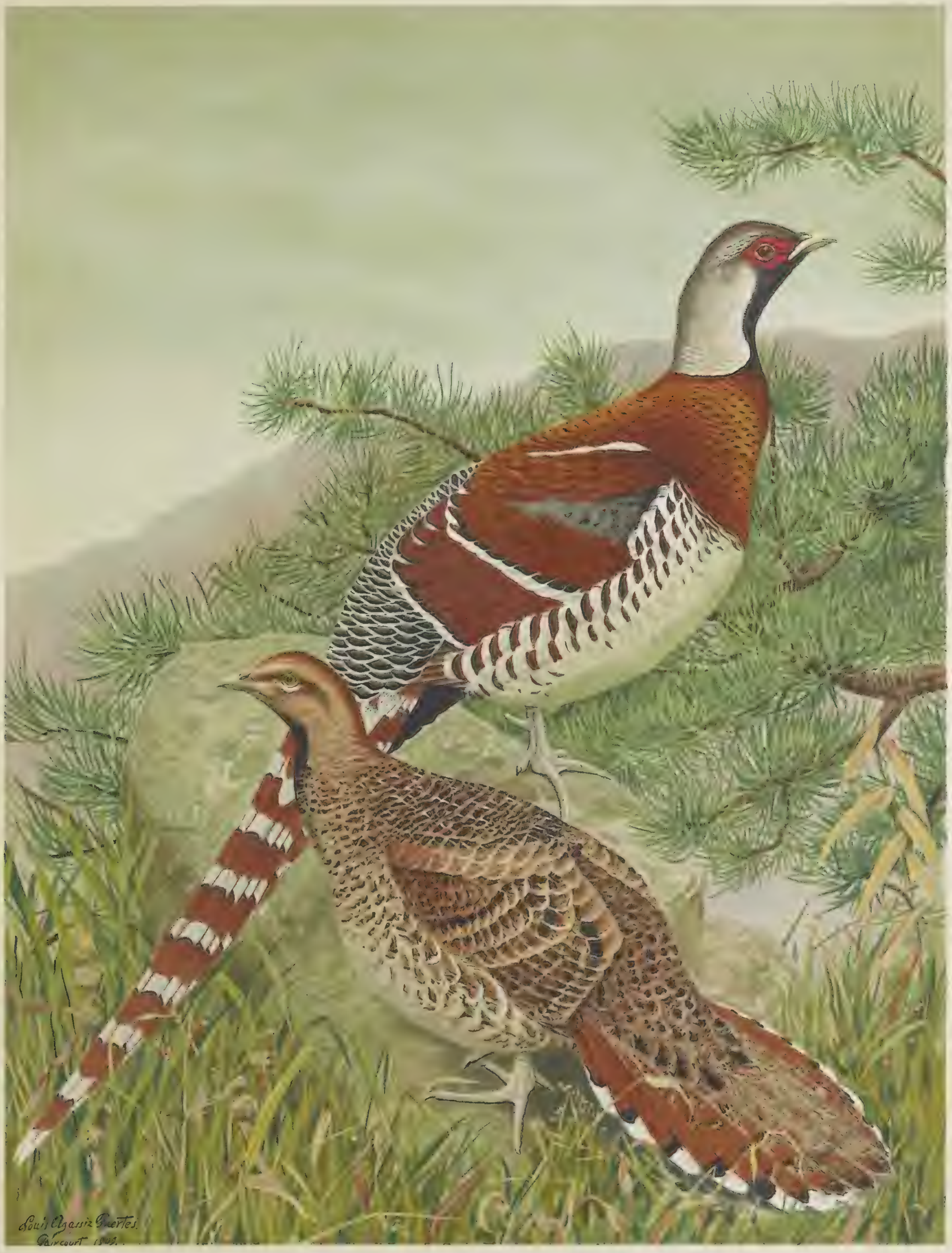
Phasianus humiae burmanicus Baker, Jour. Bombay Nat. His. Soc., XXV. 1918, p. 356.

ELLIOT'S PHEASANT

Syrmaticus ellioti (Swinhoe)

While not rare in captivity and breeding rather freely, Elliot's Pheasants are uncommon in all their wild haunts. Added to this they are timid and unusually silent birds, and prefer to run than fly whenever danger threatens. Their patterns and colours form a complex design, which in brilliant sunlight is a very beautiful mosaic, quite unlike that of any other pheasant.

PLATE LXVII.


Louis Agassiz Fuertes.
Paircourt 1893.

ELLIOT'S PHEASANT.

ELLIOT'S BARRED-BACKED PHEASANT

Syrmaticus elliott (Swinhoe)

NAMES.—Specific: *ellioti*, for Dr. D. G. Elliot, the eminent American zoologist. English: Elliot's or Chinese Barred-backed Pheasant. French: Faisan d'Elliot. Native: Han-ky (Fowl of the Dry Places, Chinese).

BRIEF DESCRIPTION.—Male: Crown brownish; hind neck bluish grey; throat and lower neck black; side neck, two wing-bars and belly white; mantle, shoulders, wings and breast fiery bronze-red, with a small sub-terminal black spot; wing-band across lesser coverts steel blue. Lower back and rump black, glossed with blue, barred and tipped with white; tail broadly barred with pale grey and chestnut. Female: general colour various shades of brown, barred and mottled above and spotted on the breast with black; chin, throat and belly mostly white; flanks and under tail-coverts tipped with white. Mantle boldly marked with black, setting off the conspicuous white shaft-streaks; lower throat and fore neck sometimes black; lateral tail-feathers chestnut, tipped with black and white bands.

RANGE.—Mountains of south-eastern China.

THE BIRD IN ITS HAUNTS

I FOUND Elliot's Pheasant in several localities in Eastern China, all more or less similar in character, and all wholly unlike the haunts of pheasants in other countries. Mountains wild and rugged in contour; the rocky heights of deep river gorges looming dark and mysterious through the morning mist. Seen thus they might well seem to mark some untrodden land or new-discovered continent. But the glamour of the sunshine dispels all this imagery, and we find ourselves face to face with a country which during past centuries has seen its hundreds of millions of human inhabitants come and go. A few miles away is a city teeming with a million and a half of Chinamen, with no railroads and not a single wheeled vehicle. Yet they have over-run this whole region, have combed the surface of mountain and valley for untold generations.

Every level spot around us shows the bright emerald of sprouting rice; every trail winding over the wildest, most isolated slopes, leads at last to a grave, either a flimsy hut of thatch sheltering a rough-hewn coffin of unpainted wood, or an elaborately carved horseshoe of great granite blocks. These old graves are picturesque and wholly in keeping with their wilderness setting. The rocks or cement of which they are made soon become weathered and lichened, and except for the conventional repetition of their designs there is little to distinguish them from the surrounding out-cropping boulders.

Two, four, even seven hundred years these graves have watched the seasons come and go, and after all this time, the worshipping descendants from time to time climb laboriously to the lofty sites and offer their little rice-paper prayer flags, weighting them down with stones along the tops of the walls. Here, when we scrape aside moss and lichen, we can make out the carven phœnix with wildly waving tail, and here at sundown sometimes come living pheasants to roost in the interstices of the balustrades and the overhanging hieroglyphiced walls.

Amid such a wild amphitheatre of hills in early spring I wait, watching, not knowing that I am about to have my first glimpse of Elliot's pheasants. I am sprawled flat upon the curving seat of an ancient grave, with an outlook which takes in two great sweeping valleys and a ribbon of river winding between. The outjutting ridge of the grave site rises five hundred feet above the muddy river. The stream zigzags off between the hills, making three twists before it is lost to view.

The sky is free of visible clouds, but the sunlight is filtered through an intangible mist, which weakens the shadows. The pale green of the lace-like brakes covers the hillside, with here and there a dash of white—the flowers of some unknown vine. A single patch of rose brightens the shrubs near me—a brave azalea bush, which has opened its many score of delicate nasturtium-like blossoms. Hundreds of other plants of this species dot the mountain, but as yet show only the hint of rose pink at the seams of their buds. The pines—all saplings, the oldest claiming hardly a dozen years—are candelabra of blossoms, each twig tipped by its panicle of a myriad pollen cups, so overflowing that the least breath sends uncountable grains aflight, while a shake fills the surrounding air with a yellow cloud.

The distant phrase of a dyal bird comes clear and sweet from the valley behind.

The warmth has just begun to summon to life the hosts of the coming spring and summer, but dangers on every side already menace the lesser folk of the underworld. Spiders crawl about on the lichened granite close to my face in search of their first victim; tiny droseras or sundews dot the moist places, their diminutive rosettes sprinkled thickly with the poisoned dew of death. One of the first butterflies shows a deep gouge in a hinder wing where some creature has snapped at it. The first mosquitoes and black flies are as eager for my blood as though it were full summer.

But a spirit of fun is not absent. Two cock pheasants are calling to one another with sharp, shrill challenge from opposite shoulders of a tall mountain. To me they are invisible, but a kite soaring slowly past apparently has them both in his eye. He can do them no harm. He knows it and they know it. Nevertheless as the challenge rises from one knoll he swoops close down as if with deadly intent and silences the bird. Then he swings around and across the hanging valley, and with a scream and swift rush brushes the bamboo tops above the second bird. So little fear have the pheasants that the first bird begins its call a moment after the kite has passed, and again the sheep in wolf's clothing silences the bird. Never once is his onslaught unsuccessful as far as putting an end to the call. The century-old fear of a bird of prey is too deep to be altogether eliminated, although the pheasant well knows this pretender to be a mere scavenger—a low caste gleaner of dead fish and refuse.

The pitiful apologies for trees—the stripling pines scantily dotting the slopes—impress one as little more than weeds, and their flower-topped twigs at this season detract still more from their arboreal appearance. We are so used to looking upward at this inflorescence that it seems some strange bloom, wholly new to us on these dwarf growths. But the pines which had sprouted along the summits of the ridges, even though but a few years old, have already attuned their scanty tufts of needles to the winds, and give forth a true piney roar—as of distant surf.

One has a feeling in this region unlike that experienced elsewhere. In our own north country the spruces and pines whisper of the moose, the panther, the bear, through the past years; here, in this apparent wilderness, it is mankind of which we think; as we gaze at the mountains close-cropped as far as the eye can see; as we look down at the river where scores of sampans comb its depths for any small fish which may by chance have escaped the myriad meshes spread for it and its kindred throughout past years.

One must look at this country from a wholly new point of view. One comes looking for some hint of real wilderness, and when at last one realizes that such is not to be found, then a new pleasure can be taken in the majestic cliffs and noble outlines. But to do this one must sink low down among the undergrowth and take a pheasant's-eye view of life to see the forlorn little maples and pines striving to rear themselves into a forest.

Even the prostrate brakes seem doomed, as the villagers gather thousands of bundles, drying them for some kind of chow.

Such the stage. Then enter the actors. The ring-necked pheasants have ceased their crowing, the kite has vanished beyond the bend of the river, when a commotion among the ferns some twenty yards away draws my attention. For some time I can see nothing but an intermittent shaking of the fronds. Then the scene of action shifts and two cock pheasants come into view, an Elliot which has lost its two longest tail-feathers and a ring-neck. The birds are sparring, but in a half-hearted way, and between bouts they peck at the ground or leaves in a self-conscious, aimless manner. Twice a bird leaps completely over the other, landing with outspread wings upon the stiff fern fronds, and dropping awkwardly to the ground. Then the Elliot seems to tire of the desultory combat and goes viciously for his opponent with beak and spur. The ring-neck at once recognizes the change of temper, and, after a single feeble attempt at retaliation, turns and flicks out of sight.

The Elliot preens his plumage, then gives a thorough shaking which rearranges every feather from crown to tail and vibrates his wings for a moment. Coming a few yards nearer he scratches lustily, and now I am conscious of a female some distance away, perfectly protected by her marbled tints except when she too begins to scratch among the débris. The birds work nearer to each other, and in low murmuring chuckles and whispers begin to chat as they work.

The male interests me greatly. Most of the time he is exceedingly conspicuous against his surroundings, but twice when he is close to, or actually among, a mass of red-brown leaves, touched up by the silvery under-sides of some half-bent ferns, he almost vanishes, although in full sight. The first time he is moving constantly, and so easy is it for the eye to follow this motion that only by half shutting my eyes can I fully appreciate the excellent approximation of colour of plumage and vegetation. The second time he stands motionless for several seconds, three-quarters of his body protruding from the reddish shrub, and dissolves before my very eyes, disintegrating into grey lichen, silvery fern frond and coppery foliage. Then, at the first turn of his head, the pheasant reassembles its parts to my eyes and steps forth.

I had several other opportunities of watching these pheasants under diverse conditions, but never again saw even an approximation to close protective resemblance on the part of the male.

GENERAL DISTRIBUTION

The range of Elliot's Pheasant, as far as we know it at present, includes those parts of the three provinces of Chekiang, Kiangsi and Fokien which lie south of 31° N. lat.; east of 117° E. long.; and north of the parallel of 25° N. lat. The records have been sporadic, and the bird doubtless extends much farther into the interior than we are aware.

GENERAL ACCOUNT

This bird is confined to the mountains, living at moderate elevations in the forests or among dense bamboo undergrowth. David's statement, which has been quoted by all succeeding writers, that Elliot's Pheasant is constantly on the move, being found in a locality one season and then disappearing for several successive years, was based on the assertions of natives, and I could find no confirmation of a habit so unusual in a gallinaceous bird. The birds are certainly not common in the part of their range with which we are familiar, but when they disappear from any locality it is because they have been exterminated. They have no greater tendency to wander than any of the more well-known pheasants, and are certainly less nomadic than the eared pheasants.

Indeed, at the altitudes at which they live there is little or no necessity for leaving their haunts, even in winter, and the villagers in several places told me that the birds remained on neighbouring slopes throughout the entire year.

There is no doubt, however, that these pheasants are extremely local and not abundant anywhere. They are very timid birds, and to a certain extent this may account for their apparent scarcity. Their silence is another factor in keeping their presence from being known, and I have never heard these birds utter a sound except under the provocation of extreme fear, or again when, feeding quietly together, they give voice to the usual low phasianine murmur or chuckle.

Elliot's Pheasants are not especially good flyers, and, of course, always prefer to use their legs for locomotion. I have never seen them fly uphill, but when flushed well up on a slope they rise quickly, and when clear of the surrounding vegetation veer outward, cease beating and scale slowly downward, giving a single flap now and then. When seen thus in clear sunlight they are very beautiful, their varied markings producing a harlequin effect unlike that of any other pheasant.

The only thing which has been recorded in literature concerning the food of this species is Swinhoe's note of a bird which had its crop crammed with seed-pods, seeds, berries and several kinds of leaves. The birds which I shot or have had sent to me were consistent in this vegetable diet, and seemed to prefer a small, cherry-like berry growing on a trailing vine. No aromatic leaves were eaten, unlike the preference shown by the tragopans and others. A few remains of ants were the only hints of animal diet.

I could learn nothing at first hand of the roosting places of these birds, except where, in several cases, I found unmistakable signs that one or two were roosting in the interstices of the balustrade of an ancient Chinese grave. One evening I saw a cock pheasant actually come to such a place, and after preening his plumage in the failing light, hop down and settle for the night between two carved blocks. Curiously enough he roosted head inward, tail hanging down outside, facing the slope. To my way of thinking, this was a great mistake. Any marten or other marauder could cut off the

HAUNTS OF ELLIOT'S PHEASANT

High up on the semi-bare mountain sides, most elaborate and ancient Chinese graves are occasionally seen, beautifully carven, yet fitting harmoniously into their setting. One evening I saw a cock Elliot Pheasant make his way to the top stone of a graceful grave balustrade. After preening his plumage in the failing light, the bird hopped down and settled for the night between two carven blocks. Curiously enough, he roosted head inward, tail hanging down outside facing the slope, and, to my way of thinking, this was a great mistake, for any marten or other marauder could cut off the bird's only way of escape. However, the pheasant doubtless had his own good reasons for his reversed position. As I slipped away, the grave was beginning to be silvered by the moon, and I left the living bird and the carven phoenix side by side.

HAUNTS OF ELLIOT'S PHEASANT

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A correspondent living near Mokanshan, Chekiang, writes me that in that vicinity the natives have no guns and do little trapping, but locate the roosts of pheasants and go out in crowds armed with clubs and kill the birds sitting or flying, occasionally getting an Elliot Pheasant by this crude, barbarous method.

The half-hearted battle which I have related as taking place between an Elliot and a ring-neck cock is the only association observed between the former and any other bird or animal. Elliot's Pheasants seem to keep to themselves, as independent as they are wary.

Our knowledge of the home life of Elliot's Pheasant is confined to observations on captive birds. Its relation to mankind may be summed up in the birds roosting on his graves, making an occasional meal from his rice-fields, and being in return trapped and eaten. It is too rare and wary a bird to figure often in the menu of a Chinese farmer, and unless its range extends well into Kiangsi its future as a wild bird cannot be said to be hopeful.

In the height of the courtship season these birds beat the air with their wings much like the silver pheasant. The note following this is a rapidly uttered *cock-cock-cock-cock-cock!* When picking up grain the cock will often call the hen in a low voice, and, as she approaches, will spread his tail and flatten the plumage generally in her direction, the wattles meanwhile swelling appreciably.

CAPTIVITY

Père David, in 1874, brought the first living specimens of Elliot's Pheasants to Europe, and deposited them in the Jardin des Plantes. Here they thrived and bred, and eight years later a trio of young birds was purchased by the London Zoological Society. Since then they have been bred in many zoological gardens and by private individuals, and are almost always to be found offered for sale by the larger dealers. Their fecundity in captivity is very encouraging, and while they do not seem to adapt themselves very well to acclimatization on large estates, yet it is probable that, after they are exterminated in the wild state, the species may be perpetuated in captivity. They seldom become really tame, and must be treated with especial care as regards any sudden alarm, as at such a time all restraint is forgotten and the birds dash about wildly.

In this country Elliot's Pheasants begin to lay in late March or early April, and the average number of eggs to each hen is ten or eleven. The birds do better if paired singly, indicating a feral monogamy, and while the hen is sitting the cock remains constantly in the vicinity of the nest. The incubation is from twenty-four to twenty-five days. Three out of four hens which I have observed for several successive years have built quite substantial nests of straw, bringing it from a distance of several yards and arranging it in a hollow which they had scraped out with beak and claws in the ground, under the shelter of an evergreen tree.

The eggs are broad ovals, with considerable gloss. They vary from creamy white to a dull salmon colour, often with tiny white dots of lime in the deeper pores of the shell. They measure 33 mm. in breadth by 42 in length.

These pheasants live fairly well in captivity, as testified by the records of thirty-two individuals which have been in the possession of the London Zoological Society. The average length of life was two years and eight months, while one bird lived for six years and four months.

DETAILED DESCRIPTION

Adult Male.—Forehead, crown-feathers bounding lower part of bare facial area, ear-coverts and nape brown. Base of crown-feathers chestnut. The growth of black featherlets is quite dense near the orbit, and the entire under eyelid is white. Narrow, almost concealed, superciliary line, white with brown tips. On the hind neck the brown merges gradually into dark slaty grey, and this on the side neck pales into the greyish white of the sides of the throat and neck. Lores, chin and upper throat dark smoky brown, becoming dead black on the lower throat and extending down the ventral neck to the breast in a narrowing line of glossy steel-blue feathers.

The grey of the neck changes abruptly on the breast, lower neck and mantle plumage into rich rufous with a wide, terminal, disintegrated fringe of glistening metallic copper. At the base of the fringe an elongated black bar extends some distance out over the web from the tip of the rachis, recalling the hemisphere of *mikado.* Behind the mantle, on the back and rump, the rufous and copper cease abruptly, giving place to black with a terminal white fringe and two more or less distinct white cross-bars.

The wings are rather complexly marked. A row of large feathers with a very wide sub-terminal white band forms a conspicuous band defining the antero-interior margin of the wing, some of these feathers being mantle and others true scapulars. Down the inner margin of the wing the feathers retain the white as a narrower fringe until, on the longest scapulars and tertials the white band formed by the greatest coverts is met. Posterior to this the inner secondaries continue the band as grey mottled tips, becoming white again on the larger secondaries in a third bar curving gradually forward across the wing.

Returning to the mantle-scapular bar, we find the succeeding rows of feathers contributing their part to the white by a cross-bar high up on the feather, but with much of their distal area steel blue, making an alar border of this colour to the white bar. Proceeding outward, over the wing surface, we find a broad oblique band of metallic blue extending across the median coverts, all the remaining coverts being rufous with a metallic copper fringe like the mantle, the fringe dying out towards the greater coverts and along the outer margin of the wing.

The greater coverts and secondaries are chestnut with a wide sub-terminal black bar and, as we have seen, a still wider terminal white band. The primaries are dark brown, freckled with buff on the outer web.

The tail-coverts offer an abrupt change from the black and white barred rump, being similar to the rectrices. The entire feather is divided into successive bands of chestnut and grey, averaging 20 mm. each in width, with indistinct, narrow black margins to the two colours. The upper tail-coverts show considerable dark vermiculation in the grey bands, and on the lateral rectrices there is an increase of the black pigment together with successively increasing white tips.

The entire breast is like the mantle; the belly solid white superficially, but showing much dark brown and black on the concealed basal portion of the feathers. This white area begins very abruptly in a transverse line on the lower breast, but grades off on the sides by a graduated fringe of white, which as it disappears shows more of the black and rufous basal area. Under tail-coverts black, with more or less chestnut bases; iris light brown; mandibles yellowish; bare facial skin vivid red; legs and feet bluish grey. Length, 800 mm.; beak to nostril, 17; wing, 235; tail, 430; tarsus, 58; middle toe and claw, 53. Spurs, about 20 mm., slender, curved and sharp.

ADULT FEMALE.—Centre of crown, occiput and nape olive brown with dark rufous margins, the rufous sometimes being the dominant colour. Lores, lower eyelid, forehead, sides of crown and face pale fawn, becoming greyer on the lower hind neck and pinker on the lower sides of the throat and neck. Mantle black, with two irregular buffy cross-bars, a short, white, arrow-shaped shaft-mark and a broad olive terminal fringe. The black sub-terminal area is often rounded into two ocelli by the surrounding rufous, white and olive. The white wing-bands of the male are all faintly indicated by pale mottled olive feathers. The back and rump are black, mottled with grey, buff and olive in endless variety, sometimes so thickly that the black is reduced to a broad shaft-stripe. The scapulars and coverts are more coarsely mottled, irregular broken buff cross-bars being visible on many feathers, and most of them with a whitish terminal fringe beyond the olive sub-terminal area.

On the greater coverts are two well-marked, rounded black ocelli, that on the inner web dying out on the secondaries, and the ocellus on the outer web being absent in most of the median coverts. The outer secondaries gradually lose the mottling and become black with oblique rufous cross-bars, which, on the primaries, are pale buff and confined to the outer web.

The grizzled pattern of the rump is continued on the upper tail-coverts and central rectrices, a black sub-terminal black shaft-mark being conspicuous on the former, while the latter show indistinctly shaded, dark cross-bars alternating with the clouded and mottled grey portions. The tips are pale buff.

The lateral rectrices are bright chestnut, with marginal traces of the mottled grey bands on the 2nd and 3rd pairs, a black sub-terminal band and a broad white tip. The under tail-coverts are miniatures of these, with considerable basal black.

In one extreme type the chin, throat, and a rather narrow line down over the central breast are black, in strong contrast with the surrounding pale grey brown or fawn colour. In other birds of equal age the black is partly or wholly absent from chin and throat, or from the chin alone. I have seen but three individuals in which the black was wholly absent. The breast is of a more rufous brown than the neck, and over this the black of the mid-neck spreads out in the form of perfectly round spots, or an imperfect cross-bar. On the concealed portion of the feather we sometimes find a central white shaft-spot and dark mottling. As in the male, the belly is chiefly white, with much scarcely concealed basal brown and black, the feathers of the sides with less white.

Iris hazel brown; facial skin showing red under the featherlets; bill dark yellowish horn; legs and feet slate colour. Length, 500 mm.; bill from nostril, 18; wing, 210; tail, 195; tarsus, 63; middle toe and claw, 52.

Chick in Down.—One-day-old male. Crown dark chestnut, beginning at a point at base of bill and widening and paling posteriorly. Broad superciliary bands from bill to nape pale buffy white. Narrow line 6 mm. long, down and back from the eye to the ear, black. Broad line from ear back to nape, dark brown. The broad chestnut crown narrows and darkens on the nape, and extends back to the base of the tail as a broad, dark-brown band, paling laterally into rufous. On the sides of the lower back two wide longitudinal bands of buff separate the dark brown from the rufous. Down of the upper arm and shoulder of wing dark brown anteriorly, paling posteriorly. Fore arm grey; alulae white. Under wings white. Tail down buffy rufous.

Chin, throat, belly, inner thighs and under tail, creamy white. Breast washed with rufous buff. Outer thighs pale rufous. Skin of eyelids bluish; cere, base of mandibles and facial skin pink. Mandibles grey, edges and egg tooth yellowish white. Legs and feet pale flesh-colour. Spurs, distinct oval nodules. Iris, stone-colour.

EARLY HISTORY AND SYNONYMY

In 1871 Swinhoe secured a pair of pheasants in Chekiang which he recognized as representing a new species, and named in honour of Dr. D. G. Elliot. He very naturally placed them in the all-inclusive genus *Phasianus*, but Elliot, recognizing the several differences which separate this from the true *Phasianus*, established for it the new generic name *Calophasis*. While agreeing with this in theory, I have found it agreeable to my researches to include this and its allies *humiae* and *burmanicus* in the genus *Syrmaticus*.

SYNONYMY

Phasianus ellioti Swinhoe, Proc. Zool. Soc. 1872, p. 550 [Chekiang]; Sclater, Proc. Zool. Soc. 1874, p. 497; David & Oustalet, Oiseaux de la Chine 1877, p. 412 [Chekiang, Eastern Fokien]; Sclater, Proc. Zool. Soc. 1882, p. 631; Sclater, List Animals Zool. Soc., London, 1883, p. 480; Beddard, Proc. Zool. Soc. 1885, p. 844; La Touche, Ibis, 1892, p. 410 [Yen-ping-fu Hills]; Grant, Cat. Birds Brit. Mus., XXII. 1893, p. 335; Nehrkorn, Katalog der Eiersammlung, 1899, p. 194 [N.W. Fokien]; La Touche, Ibis, 1900, p. 49; Rickett, Ibis, 1900, p. 59 [Fokien]; Günther, Proc. Zool. Soc. 1904 (2), p. 129; Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 37; La Touche & Rickett, Ibis, 1905, p. 58 [Kuatun, Fokien]; Rothschild, Bull. Brit. Orn. Club, XXI. 1907, pp. 23, 24, 25; Mitchell, Proc. Zool. Soc. 1911, p. 521; Lanning, Wild Life in China, 1912, p. 116.

Calophasis ellioti Elliot, Monograph Phasianidae, II. 1872, text, pl. XIII. bis.; Gould, Birds of Asia, VII. 1874, text, pl. 23; Grant, Hand-book Game-birds, II. 1897, p. 41; Seth-Smith, Avicultural Magazine, IV. 1898, p. 142; Sharpe, Hand-list Birds, I. 1899, p. 38; Oates, Cat. Birds' Eggs Brit. Mus., I. 1901, p. 58; Rothschild, Bull. Brit. Orn. Club, XIV. 1904, p. 58; Rothschild, Bull. Brit. Orn. Club, XXI. 1907, p. 23; Heinroth, Zoologischer Beobachter, XLIX. 1908, p. 21; Martens, Jour. für Orn. 1910, p. 449 [Fokien]; Pocock, Proc. Zool. Soc. 1911, p. 862.

Gallophasis ellioti Hume, Ibis, 1881, p. 608.

Syrmaticus Ellioti, Beebe, Zoologica, I. No. 15, 1914, p. 283.

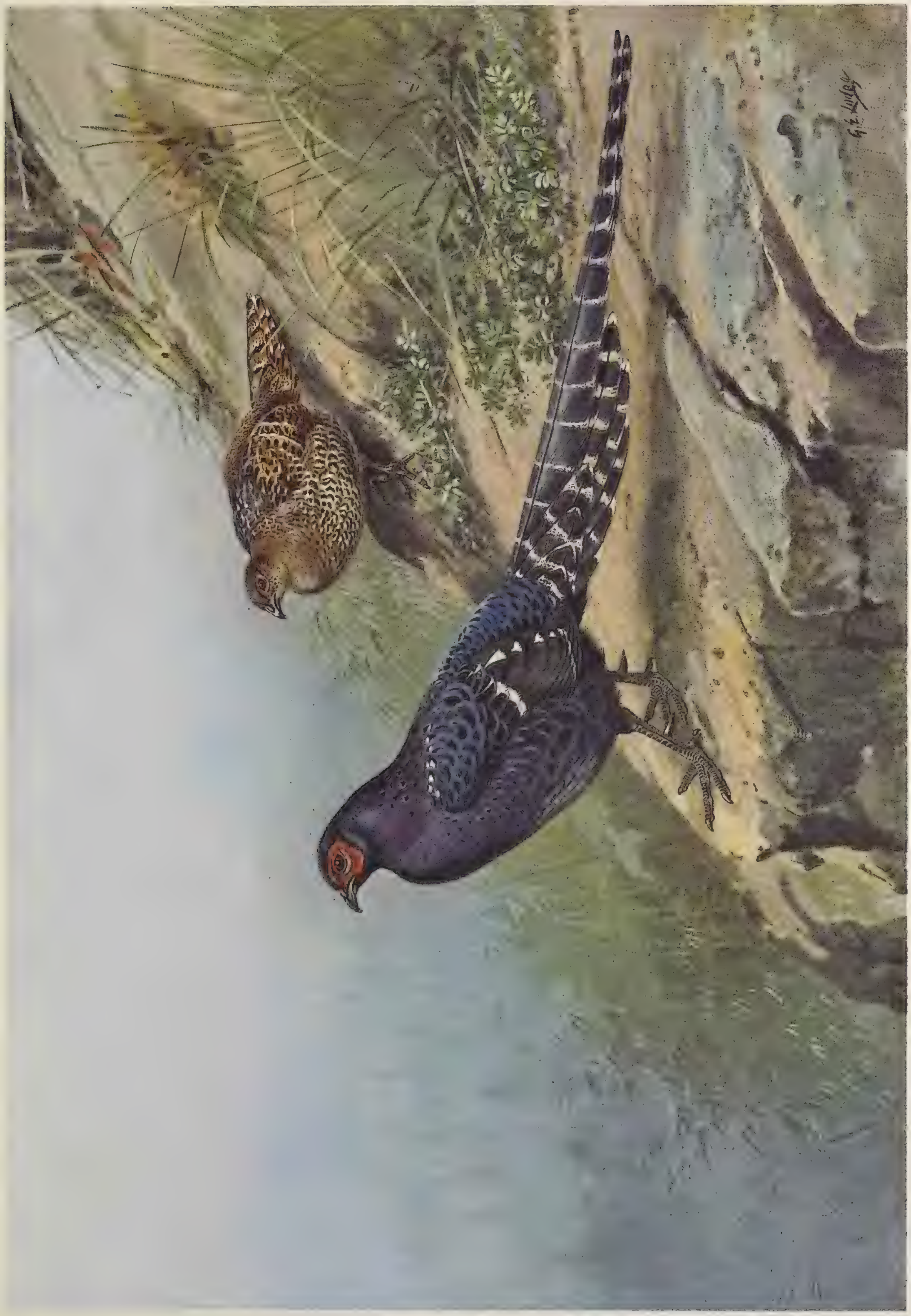
MIKADO PHEASANT

Syrmaticus mikado (Grant)

This bird received its name from two long, black, central tail-feathers taken from the head-dress of a Formosan savage. Later the same collector who obtained them was fortunate enough to secure living specimens of this splendid purple and black pheasant.

The birds appear to be confined to the region of Mount Arizan, in the centre of Formosa, at an elevation of six thousand feet and up. Among the oaks, pines and scrub bamboo clinging to the more or less precipitous sides of the great mountain the Mikado Pheasants make their home.

PLATE LXVIII.



MIKADO PHEASANT.

MIKADO PHEASANT

Syrmaticus mikado (Grant)

NAMES.—Specific: *mikado*, the title of the Emperor of Japan, within whose possessions this pheasant lives. English: Mikado Pheasant.

BRIEF DESCRIPTION.—Male: Head blue black; facial skin red; neck, breast and mantle black, with a purple fringe enclosing a velvety black spot; rest of upper parts black, with narrow steel-blue fringe; tail-coverts and tail black with white cross-bars; secondaries and many coverts tipped with white; posterior under parts black. Female: Head and neck olive brown, becoming rufous on crown and nape; ear-coverts black and white; mantle, back and rump black, mottled with rufous, and with a conspicuous white arrow-mark or shaft-streak; scapulars and coverts with two black ocelli framed in rufous and olive; secondaries barred with rufous and black; central tail-feathers chestnut, pale buff on margins and mottled with black, with a dozen black cross-bars; lateral feathers with black and white tips; chin and throat brownish white; breast olive grey; belly and sides whitish.

RANGE.—Mount Arizan, central Formosa.

GENERAL ACCOUNT

ABOUT the year 1906 Mr. Walter Goodfellow, while on a collecting expedition in the central highlands of Formosa, obtained two long black tail-feathers of a pheasant. These were named *Calophasis mikado* by Mr. Grant, who wrote of them that they were shaped like the central rectrices of Hume's pheasant, were black in colour and crossed with a dozen narrow grey bands about 38 mm. apart. They were imperfect at the base, and measured about 450 mm. in length.

Mr. Goodfellow says of these: "I found these feathers in the head-dress of a savage, who had come to carry our baggage. He said he had killed the bird on Mount Arizan and that it was rare."

These type fragments are now in the British Museum, where I examined them. The basal parts of the shafts are not imperfect, but bent around a bit of thong and bound again to the shaft higher up with brown and red twine.

On the Racu Racu Mountains at seven thousand feet elevation the same collector later secured a female pheasant which proved to be a Mikado.

In 1907 Rothschild described the adult male and argued that this and the allied barred-back pheasants should all be included with the true *Phasianus*.

Another collector who was fortunate enough to observe the Mikado Pheasant was Dr. Moltrecht, who, during a stay of three months in Formosa, obtained an adult and an immature male, besides shooting a female which he was unable to secure. He says that the adult male was shot at an elevation of eight thousand seven hundred feet on Mount Arizan, and that the females are to be found at lower elevations.

The sum total of our knowledge of this pheasant in its Formosan haunts is contained in the following communication from Mr. Goodfellow. (Ibis, 1912, pp. 655–657).

"I cannot agree with Dr. Moltrecht that the females of this Pheasant are found at a lower altitude than the males. I met with both sexes together, at the same season of the year, at any altitude above six thousand feet along the Arizan region; below that elevation I do not believe they are to be found. I questioned the savages about this repeatedly, and they all agreed with me that it was so. The Arizan forests slope up from the west, culminating in a sharp, razor-backed ridge running north and south for many miles. From about the centre of this, the great bulk of Arizan itself bulges out to the west, ending in huge precipices. Everywhere up to the top the ridge is covered with dense forest, with a still denser undergrowth of scrub-bamboo averaging about seven feet high. Above six thousand feet, giant cypress-trees predominate, with many junipers and pines just along the ridge.

"To the south, where I pitched my first camp, great oaks were quite as numerous as cypresses. On the east side of the ridge, facing Mount Morrison, is a very deep valley with remarkably steep sides. In some places it is covered with high grass, and in others with trees. It is on the ledges among the latter that the Mikado Pheasant permanently lives and probably breeds. Almost everywhere it is much too steep for any one to descend very far; were it not so, I should probably have been able to obtain more living birds than I did. Failing this, the only way was to set the snares for catching them along the top, and a little way down the west side of the ridge.

"In the early mornings and evenings the birds came over the ridge to feed, but descended only a very short distance. If any were flushed they always flew straight up the ridge and over to the other side, but on two occasions a cock bird alighted in a pine-tree on the top and remained there until the hens had time to get away below. It was very rarely that we saw the birds, for they were very scattered and nowhere numerous. On two occasions I saw a pair, once two hens, and again at another time a cock with two hens. That was the sum total seen during three months. One of the cocks I shot, as I then had a number of living males.

"On my way to meet Mr. Elwes on his arrival at Arizan I flushed the cock with two hens mentioned above. The latter instantly flew away down the cliffs, but the cock remained behind among the ferns clucking like a hen with chickens. I was accompanied by a savage, and together we went to investigate, and when within a few yards of the spot a fine cock Mikado rose and went right over the cliffs, like an arrow. I had a continuous view of him until he alighted in the trees below, and very beautiful he looked with his long white-barred tail; otherwise he appeared quite black on the wing. With the exception mentioned above, all the skins I obtained were those of birds which had died in the snares or had been otherwise injured.

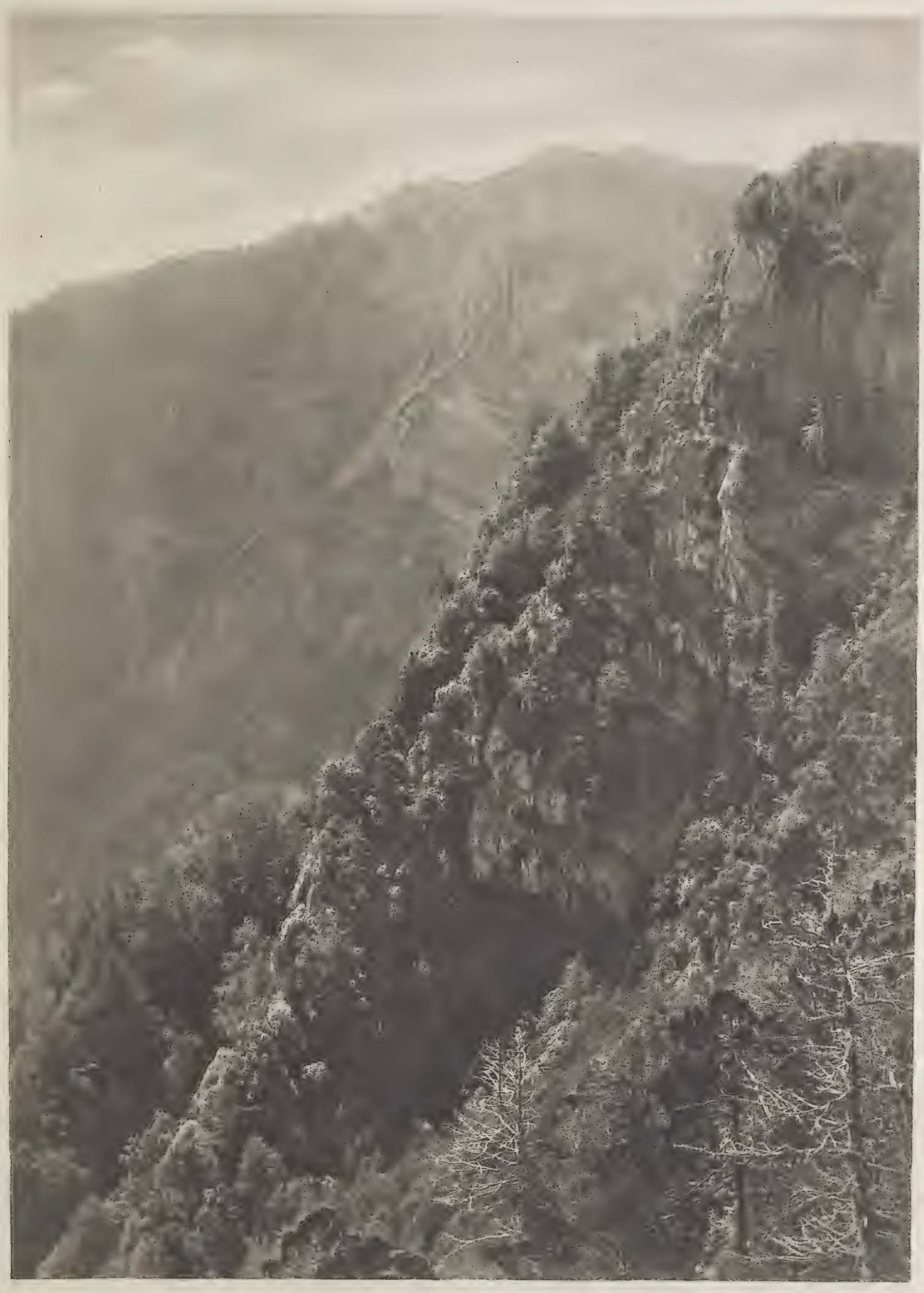
"I had from the first with much difficulty impressed upon the savages that they were never to shoot pheasants, as there seemed to be so few in any one district. At first I tried various methods of catching them, but none succeeded; so at last I was forced to depend upon the savages' plan, which was effectual, but at the same time the birds ran a great chance of being seriously damaged. The snares were set for many miles along the ridge and upper part of the forests, several hundreds being put down simultaneously.

"It was out of the question trying to attract them with grain, raisins, or other food. I tried these at first without any success, and when I secured my first living examples I soon found out the reason. It was most difficult to get the birds to eat grain, one or

MOUNT ARIZAN: HOME OF THE MIKADO PHEASANT

The Mikado Pheasant lives among the wild fastnesses of Mount Arizan, Formosa. Dense forests clothe the steep slopes to the very summit, clinging to sheer cliffs, overhanging breathless gorges.

Here, from a mile and a half to two miles above the sea, in gloomy cypress jungles and among bamboo and rhododendron thickets, these magnificent, velvety-black birds feed, and call, and mate, and rear their chicks. Where man can only cling, and creep with snail-like pace, the intimate life and habits of these pheasants must long remain a mystery.



MOUNT ARIZAN: THE HOME OF THE MIKADO PHEASANT.

two being particularly obstinate in this respect. Had it not been for the soft food I had with me, I question if I should have succeeded in keeping some of them alive. As it was none of them died, and with the exception of two which were accidentally killed on Arizan, all arrived safely in this country. In a wild state (at any rate during the months I was there) they appeared to live almost exclusively on green stuff. I was able to identify the plant, which was growing everywhere, through finding some freshly plucked leaves in the crop of a bird I had skinned; after that I had no further trouble with them until they took to grain. In the crops of one or two I found insects, but during the winter months all insect life was very scarce indeed. A food they must find plentiful at certain seasons is the wild strawberry, which during my stay was mostly in bloom. In the snares set for pheasants were caught tree partridges (*Arboricola crudigularis*), *Columba pulcricollis*, *Trochalopterum morrisonianum*, two woodcocks, and a monkey.

"The martin is, no doubt, the great enemy of the Mikado Pheasant, and probably that is why they are so scarce. These animals were a constant source of trouble to me and frightened my live birds considerably. Night after night they came into the camp in the boldest manner and made sleep impossible. Traps were of no avail, and to shoot them under the circumstances was out of the question, even if one had had the opportunity.

"Both sexes of the Mikado make a loud cheeping noise like young turkeys, especially in the early morning, and when frightened or disturbed the male hisses like a snake. Undoubtedly the skins fade quickly, for already those procured are less bright than they were and not nearly so brilliant as the living birds, which are resplendent. They appear to nest about the end of April, for those I skinned at the beginning of that month were just coming into breeding condition, and one of the hens commenced to lay early in May; the other two, being younger birds, have not laid this year."

This data was obtained during a second expedition made to Formosa in January 1912 with the object of securing living specimens of the Mikado Pheasant. With this object in view, the collector made two camps on Mount Arizan, at seven and eight thousand feet respectively. With the aid of the savage natives he succeeded, as we have read, in obtaining a number of specimens. As a result of this expedition, eleven skins and an equal number of living birds were brought to England. The latter, eight males and three females, I had the pleasure of seeing in the aviaries of Mrs. Johnstone. Later these birds found their way to various aviaries, and I was able to secure three for the New York Zoological Park. As with a number of other rare pheasants in past years, these first birds laid freely and the young were hatched with such ease that many people believed that this species would equal or surpass the common pheasant as a semi-domestic bird, but the second generation has not fulfilled the hopes aroused by the first.

This splendid lot of Mikado Pheasants were trapped by the savages in Formosa in spring snares, like those set for argus in runways in the Bornean jungle. The birds were rare and found only in the vicinity of Arizan at an elevation of seven to twelve thousand feet, never lower. They do not feed on grain and but little on berries, but almost altogether on the leaves of a very common, low-growing plant, with the leaves of which their crops are often stuffed. This plant is not found below seven thousand feet. Around Mount Arizan is a wide amphitheatre or semicircular ridge, sloping off in one direction down to a very large, deep valley, on the other side of which is Mount Morrison. The sides of this valley are exceedingly steep, unclimbable in almost all places, with great outjutting cliffs of white rock, white where it is not covered with lichen and deep green moss. This is the home of the Mikado Pheasant, among six-foot bamboos and rhododendrons, the latter with white or scarlet flowers, while others are pale pink with purple centres. The birds work upward and often pass over the crest of the ridge to feed, but never go more than a few yards into the deep cypress jungle. At the slightest alarm they are up, and shoot back over the ridge down to some inaccessible ledge. Somewhere along these steep slopes they nest. One of the females which was caught began to lay late in April, while the Swinhoe pheasants, which never come up to seven thousand feet, begin to nest in March. Snowline on Mount Arizan is at thirteen thousand feet.

In appearance, in habitat, and in food, the Mikado Pheasant resembles the tragopans and impeyans, being heavy bodied and rather thick-necked, and if it were not for the long tail would show little resemblance in form to Elliot's pheasant. The notes, too, are like those of the kaleege rather than of *Phasianus*. Its note of inquiry, when not especially alarmed, is a rather high *wok! wok! wok! wok!* which is uttered slowly, and gradually becomes lower in tone until it ceases. The note of suspicion and alarm is like the plaintive, muffled notes of the silver pheasant, almost impossible to put into words. Goodfellow says the birds have a very unpheasant-like crow, which is uttered in early morning. When approached in the aviary and hidden behind brush in a corner, the pheasants utter a very serpent-like hiss, loud and startling, like the hiss of a golden pheasant when courting. When the hens are frightened and dash against the netting, a series of loud, nervous cries is drawn forth.

The feathers of the body, beneath as well as above, are black with very wide terminal bands of iridescent purple. When these are looked at with the light coming from behind the observer, small, central patches of black are brought into prominence by a circle of highly-lighted iridescent purple, the remainder of the plumage appearing dead black. These ornaments stand out like drops of dew or other extraneous objects lying on the plumage, or they remind one of small, dark peacock eyes, raised in high relief on the feathers. The gait is rather slow and stately, again recalling the tragopans instead of the true *Phasianus*. As long as the birds keep to their present habitat they will not be exterminated, as it is impossible to reach their nests or even to follow them down the cliffs.

The egg is pale creamy white, smooth and glossy. In size it is considerably larger, in proportion to the size of the parent, than in related species such as Elliot's and the copper pheasant. The average of several eggs is 50 by 38 mm.

The period of incubation is twenty-eight days, instead of twenty-four as in nearly related species. Correlated with this the young chicks are correspondingly farther devoloped when hatched, being in general larger and with the flight feathers better developed. This may be concerned directly with the unusual character of the haunts of this pheasant, the need for escape by flight down the steep, precipitous cliffs demanding greater initial development of muscle and wing power than in the other pheasants, who more often squat, or by use of their precocious legs run swiftly away.

As emphasizing relationship with the *Syrmaticus ellioti* group, Mrs. Johnstone has recently bred several healthy hybrids with the Elliot pheasant. These strongly resemble the female Mikado, but show a trace of the black throat and the rufous barring of the tail.

DETAILED DESCRIPTION

ADULT MALE.—Feathers around nostril, forehead, ear-coverts, chin and throat, dead black. Crown, nape, sides of neck, and lower cheeks glossed with blue green. Breast and mantle dead black, the wide, visible border dark violet, with a good-sized, sub-terminal, hemispherical spot at the end of the shaft, appearing velvety jet black when viewed toward the light, shining blue away from the light.

This spot is caused by an actual physical alteration of the barbules. When the feather is held against white paper or the light, the spot is revealed as a rounded or blunt triangle of very transparent vane area. The barbules in the specialized zone are slightly shorter and stouter than normal ones, but this difference is more apparent than real. The chief point of distinction is that both rows of barbules are rather closely apposed along the upper side of the barbs, being raised at a sharp angle above the dorsal plane of the feather, thus giving the barbs a narrower, more isolated appearance, and preventing any possibility of interlocking of the very few barbicles present. This change of angle causes the alteration of apparent colour, the spot showing as black when the terminal fringe appears violet, and as bluish-violet when a shift of light alters the feather fringe to black.

Back and rump jet black, with a narrow terminal fringe of steel blue. Coverts similar, the fringe becoming green on the middle and outer margins of the greater coverts, and the tertiaries and inner secondaries being glossed with green.

In the closed wing the only visible wing-marking is a transverse bar caused by the broad white tips of the line of greater coverts. As a matter of fact, all the secondaries themselves are more narrowly tipped with white, but this is invisible in the closed wing, except from the 9th or 10th inward, where the feathers begin to shorten in a line up the inner border of the wing. On the succeeding five or six the slender, wedge-shaped, terminal shaft-marks of white show very conspicuously, this line meeting the transverse line of white on the coverts at an obtuse angle.

Although ordinarily wholly concealed from view, there are from twenty to forty other coverts marked with white, in the form of short, narrow shaft-stripes on the median coverts, and good-sized round shaft-spots on many of the lesser coverts. Sometimes all but a score of the wing-coverts are marked in some way with white. In a few individuals these white spots show beyond the edges of the overlapping lesser coverts.

The secondaries are glossy black, the primaries dark brown, with paler brown shafts.

The short upper tail-coverts depart abruptly from the pattern and colour of the rump feathers, the narrow terminal fringe changing from steel blue to white, while at the same time rounded, basal spots appear, which increase into angular lines, and on the longer coverts into regular, narrow, straight, transverse white bars, somewhat clouded with dark-brown mottling.

The rectrices are similar to the tail-coverts, the lateral ones with broken bars or mere spots on the outer webs. On the central rectrices there may be as many as fifteen of these narrow white bars; on the outer a white tip and two bars crossing the inner web near the base of the feather.

The violet fringe of the breast is relatively long and the central black hemispheres quite small. On the lower breast the violet dies out, the remainder of the ventral surface being dead brownish black, with barely distinguishable narrow jet-black or pale bluish margins.

The under tail-coverts are slightly tipped with white. Facial skin scarlet, with several rows of black featherlets near the orbits. Under eyelid thickly covered with black and white featherlets. The scalation of the tarsus appears to be unique, for instead of the hinder portion being covered with scales, it is reticulate, each of the small octagonal scales being somewhat elevated, forming a rough, shagreen surface.

Iris hazel-brown, bill bluish horn colour, feet greenish-brown. Culmen to nostril, 19 mm.; wing, 230; tail, 625; tarsus, 68; middle toe and claw, 66; spur, 15.

VARIATION.—A most interesting and significant variation is found in occasional individuals which have the feathers of the rump and even those of the lower back widely tipped with a white fringe, indicating the close relationship with the Elliot, Hume and Copper Pheasant group. Both this and the remarkable variation in the abundance and visibility of white spots on the coverts is not due to age, as I have observed both extremes in young birds which still showed traces of juvenile plumage, and again in full-grown birds with long spurs. Of two such young birds one had not a single concealed white spot on any wing covert, while in the plumage of the other there were scores, including actually a broad visible band across the lesser coverts, all the feathers having wide sub-terminal bands or Λ-shaped marks or spots.

ADULT FEMALE.—Forehead, sides of crown and neck and upper breast greyish brown. Some of the ear-coverts are white, others brown. Crown and nape feathers broad and rather elongated, black with dark rufous margins all around. On the upper neck the rufous gives place to olive brown and a small rufous shaft-spot or streak appears, soon changing to white. On the mantle the white streak becomes enlarged, arrow-shaped and very conspicuous. From its base, part way down the feather, a rufous band extends outward across the webs, and still more basally is an isolated rufous shaft-spot. This is the fundamental pattern of the dorsal feathers, but in various parts of the plumage and on various individuals one finds infinite variations of this. On the mid back, for example, the oblique bar or circle of rufous has almost disappeared and the white and rufous shaft-marks coalesce to form a single elongated shaft-streak. Rather abruptly on the lower back and rump one finds the entire feather, save for the white and rufous shaft and the olive tip, mottled with rufous and black.

On the scapulars and coverts, the rufous band curves forward, forming with the olive tip a frame for the central black—a perfect ocellus on each web, recalling vividly the ocellus-pattern on female tragopans, and other pheasants. All but the inner secondaries show very regular barring of moderately wide rufous bars, and wide black interspaces. On the primaries the bars are perfect only on the outer webs, being broken or absent on the inner.

The central rectrices are chestnut, shading off into pale buff toward the margins of the webs, and are irregularly mottled with black. There are about a dozen black cross-bars. The longest upper tail-coverts are similar in pattern. On the lateral tail-feathers the pale buff and the black markings decrease, the bars becoming imperfect and finally vanishing, especially on the outer webs. Every chestnut feather, however, retains a broad white tip, and a still larger black sub-terminal zone. The under tail-coverts are miniatures of these outer rectrices.

The chin and throat are brownish white, passing into the monochrome olive grey of the upper breast. As on the mantle, white shaft-streaks appear posteriorly, and rapidly increase in size until on the belly and sides white is the dominant colour. The typical pattern is a broad white tip, then a backward-curving band of black, enclosing a rufous area. Then follows a large white zone and an irregular black band or spots at the base. As on the upper plumage, hardly two adjacent feathers show an exactly similar pattern. The lower belly is of decomposed olive feathers with wide greyish-white tips.

Iris brown; facial skin reddish; legs and feet bluish horn. Bill to nostril, 16 mm.; wing, 210; tail, 215; tarsus, 64; middle toe and claw, 56. Spur a low sharp scalule.

Juvenile Plumage.—The Mikado Pheasant attains its fully adult dress at the first annual moult. No bird in full juvenile plumage has been observed, but by examining many individuals which show traces of the immature feathers, a mosaic may be obtained, giving a general idea of this stage. The juvenile scapulars of the male bird are black, mottled irregularly with rufous and broadly margined with pale buff. The coverts are brown, narrowly margined with whitish. The flight feathers are broadly banded with rufous and the upper tail-coverts have bright chestnut marginal mottlings. There is considerable variation in the breast plumage. The more common pattern is white with two concentric bands of black, the white often tinged with rufous. This may be varied by there being only a single band, or by the appearance of a wide buffy white margin all around.

Five-day Chick in Down.—Centre and rear crown, upper neck, mantle and scapular-down dark chestnut; back, rump and sides dark mahogany or chocolate; lores, anterior and sides of crown buffy brown; lower face, chin, throat and under-parts buff, breast tinged with brownish; a narrow, brownish-black line extending down and back from the eye, over the ear-coverts; two broad, buffy-yellow stripes along the upper sides, splitting the dorsal and lateral chocolate into three parts. The wing plumage is the only contour feathering visible. Primaries dark brown, roughly banded with rufous buff on the outer web; secondaries similar, but with the bands wider, more mottled, and showing a tendency to extend on to the inner web; primary coverts like the primaries; secondary greater coverts with two distinct, sub-terminal, rounded, black ocelli. Bill dusky, pale yellowish horn toward tip and along cutting edges; feet and legs dusky.

Length, 167 mm.; bill from nostril, 7; wing, 67; tail in down; tarsus, 25; middle toe and claw, 25 mm.

SYNONYMY

Calophasis mikado Grant, Bull. Brit. Orn. Club, XVI. 1906, p. 122 [♂ described from two tail-feathers, Mt. Arizan, Central Formosa]; Goodfellow, Ibis, 1907, pp. 156, 157; Grant and La Touche, Ibis, 1907, pp. 277, 278 [♀ described, Racu Racu Mts., 7000 feet]; Grant, Ibis, 1908, pp. 600, 606, 607, 608 [Coloured plate scalation of foot, Arizan, 8300 feet]; Seth-Smith, Field, 1912, p. 1341 [first importation alive]; Grant, Ibis, 1912, pp. 654–657 [haunts and habits].

Phasianus mikado Rothschild, Bull. Brit. Orn. Club, XXI. 1907, pp. 22, 23, 24 [♂ described].

Cyanophasis mikado Buturlin, Naša ochota, 1908, p. 33.

Syrmaticus mikado, Beebe, Zoologica, I. No. 15, 1914, p. 283.

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